

ERFOLG IM STALL

COMPACT



SCHAUMANN
FEEDS SUCCESS

CERAVITAL XP
BONVITAL
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NATU
PIG
SAFETY



Piglet feeding 2024

SCHAUMANN Concept

for successful creep
feeding of suckling piglets

All about weaning

company-specific
requirements and measures

NATU PIG SAFETY line

the path to
antibiotic-free weaning

Dear farmers,

Vital and fast-growing piglets form the basis for successful pig farming. However, all phases of piglet life present farmers with specific challenges in terms of adapted feeding.

These start with providing a well-balanced creep feed for suckling piglets. While modern genetics have produced sows with vast performance potential, sow’s milk is often not sufficient to ensure the best possible development of all piglets.

Increasing demands for a further reduction in the use of antibiotics require well-coordinated measures, especially during weaning. The clear aim here is antibiotic-free weaning.

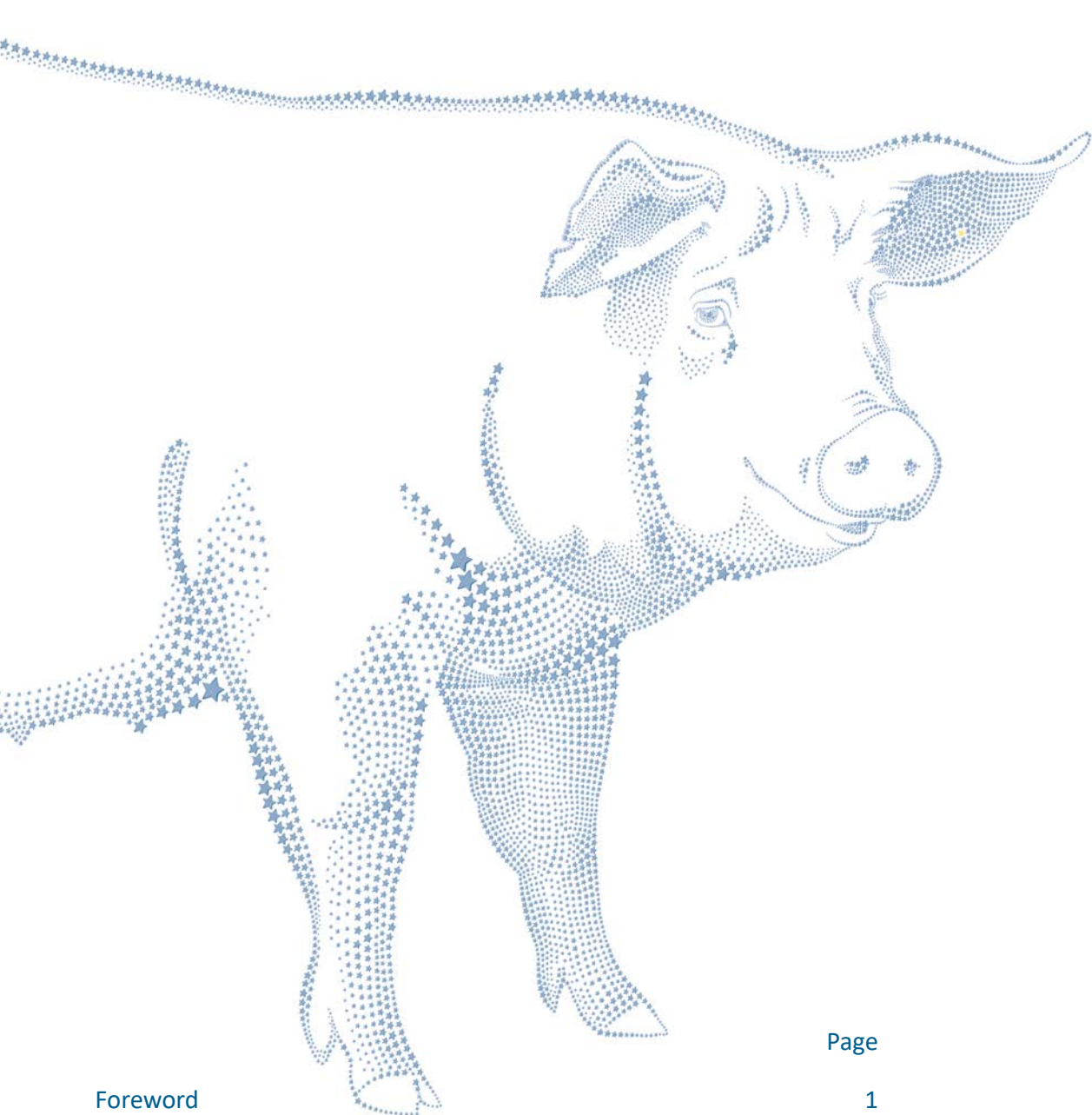
Feeding is a daily job!

Feeding is a significant factor in your operating costs. But in piglet rearing, the additional expense of high-quality feeds and a sophisticated management concept pays off, as well-raised piglets are less susceptible to disease. This in turn reduces piglet losses and allows you to make the most of the huge genetic potential available. This means more weaned piglets per sow, higher weaning weights and evenly well-developed piglets for sale for fattening.

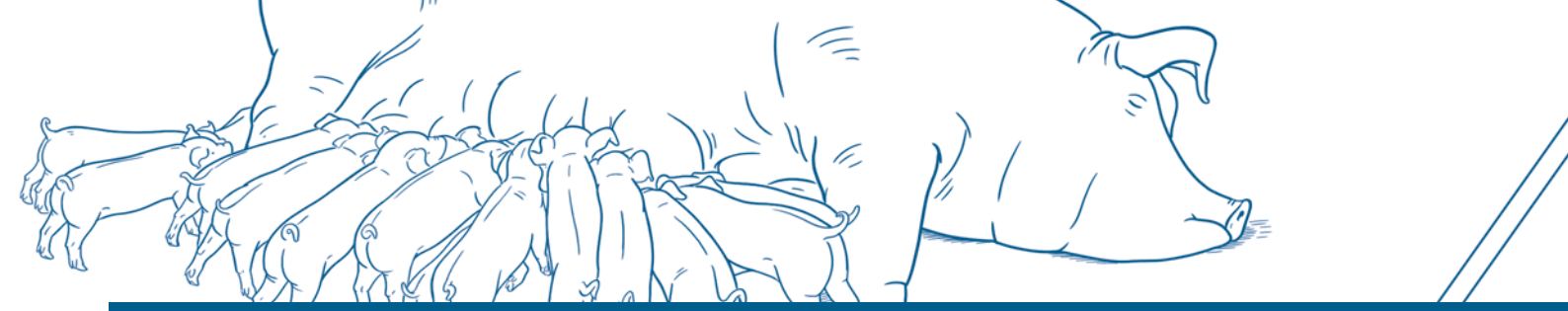
Let’s tackle it together!

The combination of a farm-specific feeding concept and intensive support from Schaumann’s expert advisors ensures successful and sustainable piglet rearing. We meet the challenges of pig feeding together, including by developing innovative active substances at ISF GmbH Schaumann Research.

**SCHAUMANN – Feeds Success -
your SCHAUMANN team**



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A successful start in life

The first few days of a piglet's life are crucial for its subsequent development and performance. Good suckling piglet management lays the foundation for fit gilts and fattening pigs.

Sows and piglets must be optimally supported both before and after farrowing. This starts with monitoring the farrowing process and continues with the right equipment for the piglet nest. Ideally, piglets will seek out the sow's teats within 15 minutes from a smooth birth, and they should drink a total of 250 ml of colostrum during the first 24 hours of life. It takes about two to three days for a litter to establish a stable teat order, where each piglet has its own, productive teat.

However, prolonged farrowing or very large litters can often impair piglet vitality. Small piglets in particular need help to reach the teats and feed on colostrum as quickly as possible. In this case, it can be helpful to provide them with an energy boost in the form of a glucose solution. Briefly and carefully dipping their snouts into Schaumann Isolyt, an energy-rich electrolyte solution, encourages less vital piglets to feed on colostrum. Very weak piglets should also be gently rubbed dry and immediately placed against a teat. The previously absorbed glucose then provides them with the energy they need for suckling.

Successful creep feeding: milk supplementation for suckling piglets

When there are many suckling piglets, there will usually be some that cannot get their own teat on the sow or only find a poor position on the teats. Very large litters can place excessive demands on sows and soon cause them to reach their performance limits. In these cases, targeted cross-fostering benefits both sows and piglets.

Balanced creep feeding also ensures that litters develop homogeneously. From the 3rd day of life, a milk replacer can be offered as a supplement to support piglets without their "own" teat in particular.

Good to know

Milk production

The sow's teats must be stimulated right from the start. This ensures that sufficient prolactin is released and promotes milk production. Consequently, there must be at least as many piglets on the sow as she has functional teats.

Colostrum quality

Piglets should always be given their own mother's colostrum. While antibodies are generic in some ways, piglets' intestinal walls only allow immune cells from the mother to pass through to boost the developing immune system.

Cross-fostering

The best time is on the second or third day of piglets' lives, when piglets have taken in sufficient colostrum from their mothers and the teat order has not yet been established. Piglets should be transferred between sows as little as possible. Each additional transfer not only increases the stress for all animals involved but can also easily spread pathogens between litters.

Short & CONCISE

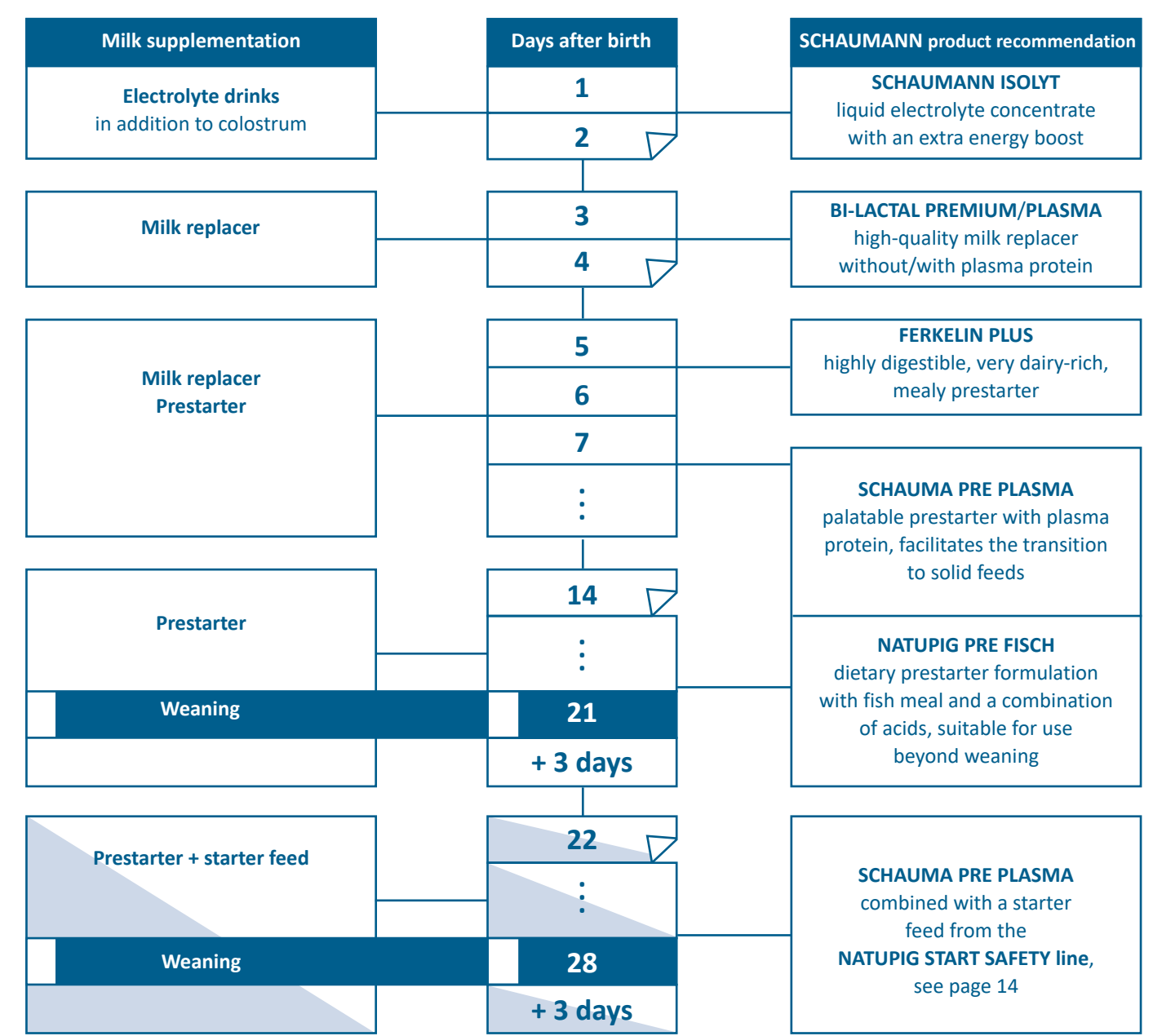
- Colostrum is the elixir of life for piglets and should always come from their own mother.
- Dipping piglets' snouts in SCHAUMANN ISOLYT provides very weak piglets with an energy boost.
- Well-balanced creep feeding helps ensure that litters develop homogeneously.

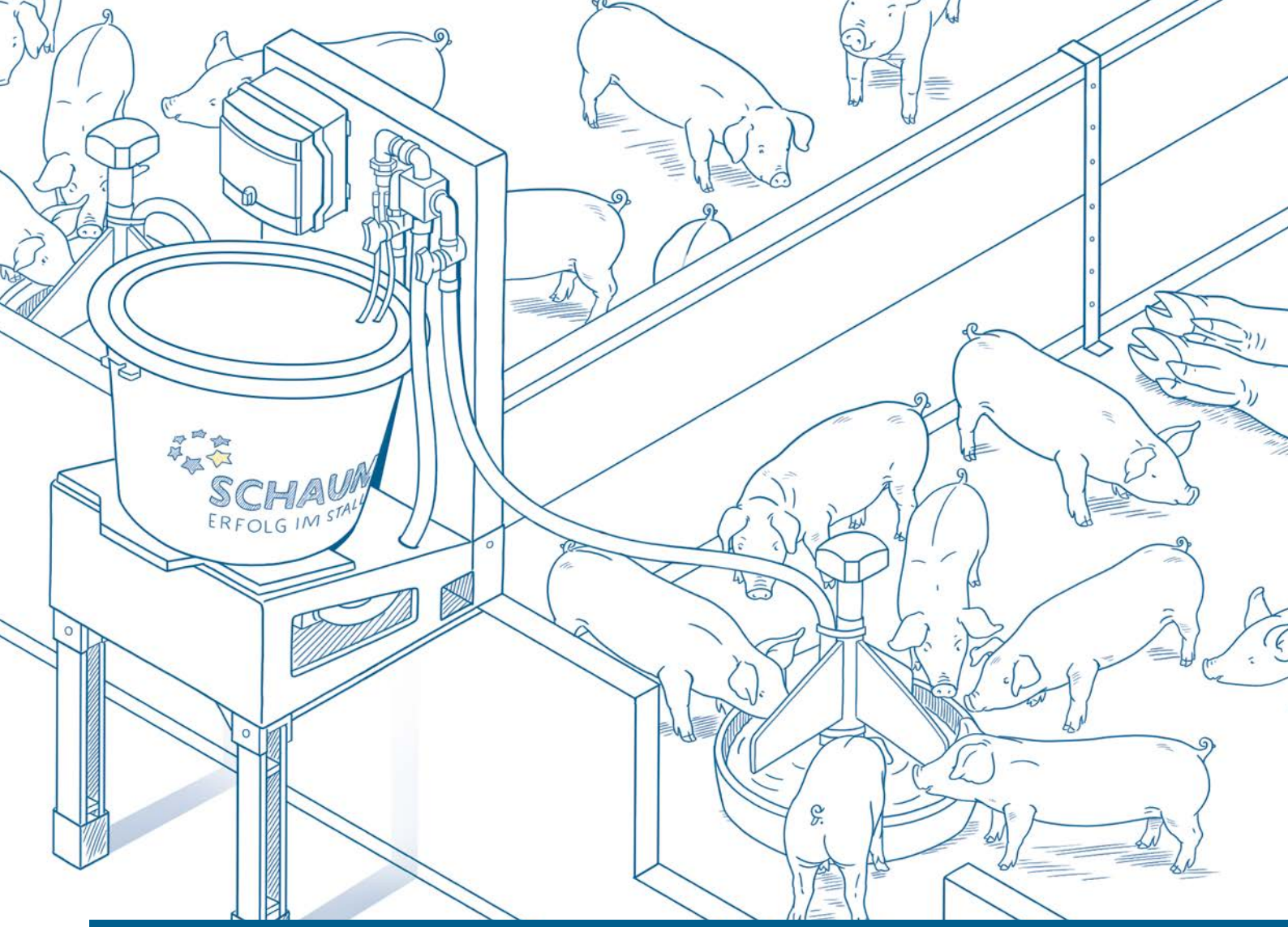
The SCHAUMANN concept for creep feeding suckling piglets

Offering customised creep feeding concepts to provide targeted support to breeding sows as they nurture their suckling piglets has become indispensable in practice. Well-balanced supplementary piglet feeding helps ensure that litters develop homogeneously. In addition, high-quality creep feeds support the development of piglets' digestive systems and familiarises piglets with plant-based feeds. This makes it easier to get them off the teats at the time of weaning.

Schaumann offers customised creep feeding options for each farm, adapted to the sow's lactation period, litter size and performance. The result is optimised intestinal health and a resilient immune system – the basis for vital piglets and steady growth.

Creep feeding of suckling piglets





Successful creep feeding with the mobile BI-LACTAL BAR

Larger litter sizes significantly increase the demands on suckling piglet management. Providing sows with the right support ensures that piglets receive an adequate supply of milk and are well developed at the time of weaning.

Maximum piglet numbers are essential for successful piglet production, but sows are often unable to cope with very large litters on their own. Increasing litter sizes push the sows to their performance limits. As a result, the milk produced by sows is often not enough to feed all the piglets. The Bi-Lactal Bar supplements the sows' milk supply, allowing them to rear up to 23 piglets per sow. This system is based on extensive cross-fostering. The smallest piglets remain with the mother sow, while the heaviest piglets (up to 23) are cross-fostered to an appropriately selected support sow. To be able to do this, piglets must be free from diarrhoea, and the support sow must be physically fit. This ensures that the support sow can cope with the large number of piglets without increasing piglet losses due to crushing.

The BI-LACTAL BAR in practice

Clear practical advantages are a more homogeneous distribution of litter weights, reduced suckling piglet losses and more piglets reared per sow and year. Smaller piglets (in terms of weight) in particular benefit from this approach. The milk bar can be quickly and easily installed on any farm.

Compared to other automated creep feeding systems for suckling piglets, the Bi-Lactal Bar is much more flexible and involves lower costs. As the Bi-Lactal Bar is not permanently installed in a pen, it can be relocated elsewhere in the barn at any time.

The BI-LACTAL BAR in practice

1



The Bi-lactal Bar is installed outside the sow pen. The milk hose connects a mixing container to a drinking bowl, which must be out of the sow's reach. When installed on or in front of the pen partition, the milk bar can be used to feed two litters at the same time.

2



Milk is freshly mixed every day and dispensed at regular intervals via the mixing container using a circulation pump.

3



The dose rate is adapted to the respective litters and will vary depending on the piglets' age and drinking behaviour and the milk quantity produced by the sow.

4



To ensure that the milk bar supply remains attractive for the piglets, small quantities are dispensed frequently. This ensures that the piglets empty the trough quickly when feeds are available and that their need for frequent small feeds is met. It also helps to maintain a high standard of hygiene.

It is essential that the system is finely adjusted. Individual settings can be made using an app, as feeding behaviour is the most important indicator for the amount and frequency of feeds to be provided. **See for yourself!**



Developmentally appropriate piglet feeding

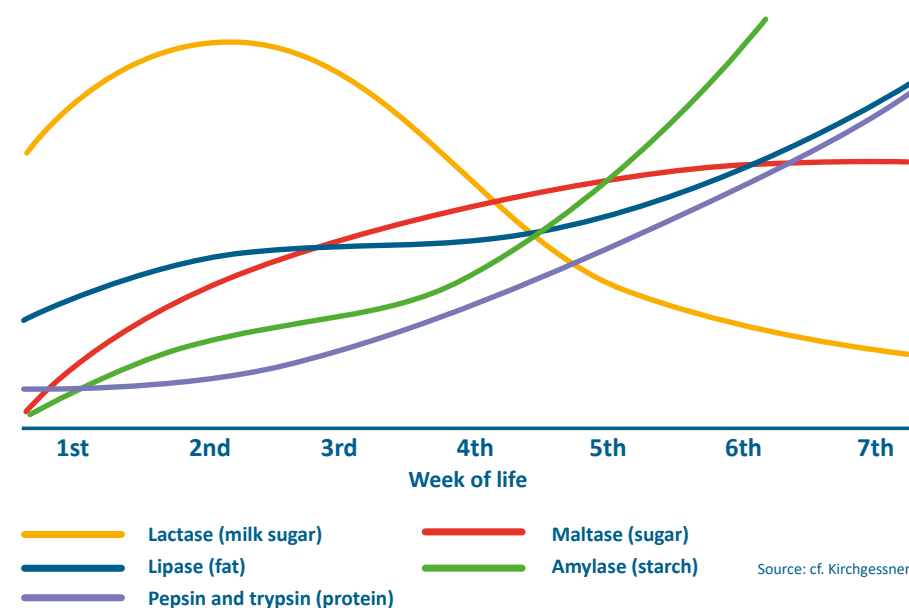
Healthy intestines are the basis for regular digestion. But piglets' intestines and intestinal function mature gradually. This is precisely why piglets and their digestive systems need special attention during the weaning phase.

Just after farrowing, newborn piglets have a lot of developmental and maturing processes ahead of them. Piglets are born with an almost sterile intestinal system. It is only later in their lives that their intestinal tracts come to be home to more microbes than their entire body has cells. Piglets have only limited capability to ward off or fight pathogens. While their bodies have innate defence mechanisms, they are unable to fight pathogens in a targeted manner, because newborn piglets are not yet able to produce antibodies. As a result, they depend on the antibodies from the sow's colostrum for a functional immune defence.

The intestines need to grow too

The development of piglets' digestive physiology determines their feeding regimen. As they are unable to produce either sufficient hydrochloric acid in the stomach or the enzymes they need for digestion in the pancreas (see Fig. 1), the gastrointestinal tract of very young piglets is unable to digest purely plant-based feeds. Newborn piglets therefore depend on their mother sows, whose easily digestible milk supplies them with the antibodies, energy, nutrients and basic intestinal microbes piglets need for their survival. Even at the time of weaning, piglets' intestinal functions are usually not yet fully mature, so that the transition from sow's milk to solid, predominantly plant-based feeds can only succeed if piglets are provided with the right support.

1 Enzyme activity in piglets' small intestines relative to age (enzymes shown together with the nutrients they metabolise)

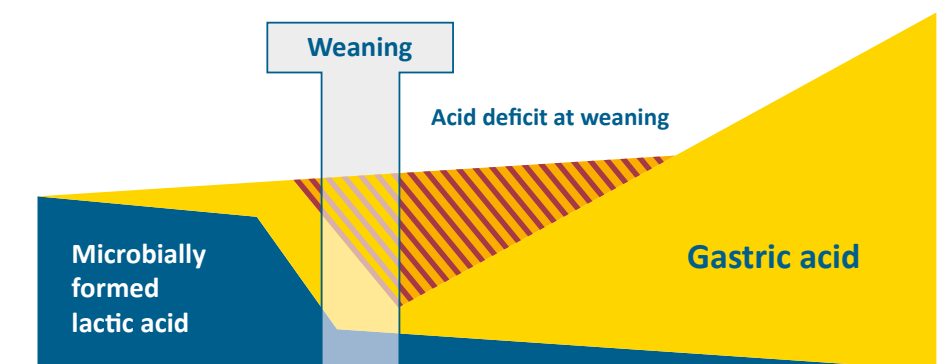


Of course, the stomach environment of piglets depends on their age and previous feeding regime. While the pH value in the stomach of suckling piglets is determined almost exclusively by lactic acid, the mucous membrane lining the stomach must first "learn" to produce the hydrochloric acid necessary to digest plant-based feeds (see Fig. 2). This process has a strong influence on how well piglets tolerate various feeds, especially during weaning.

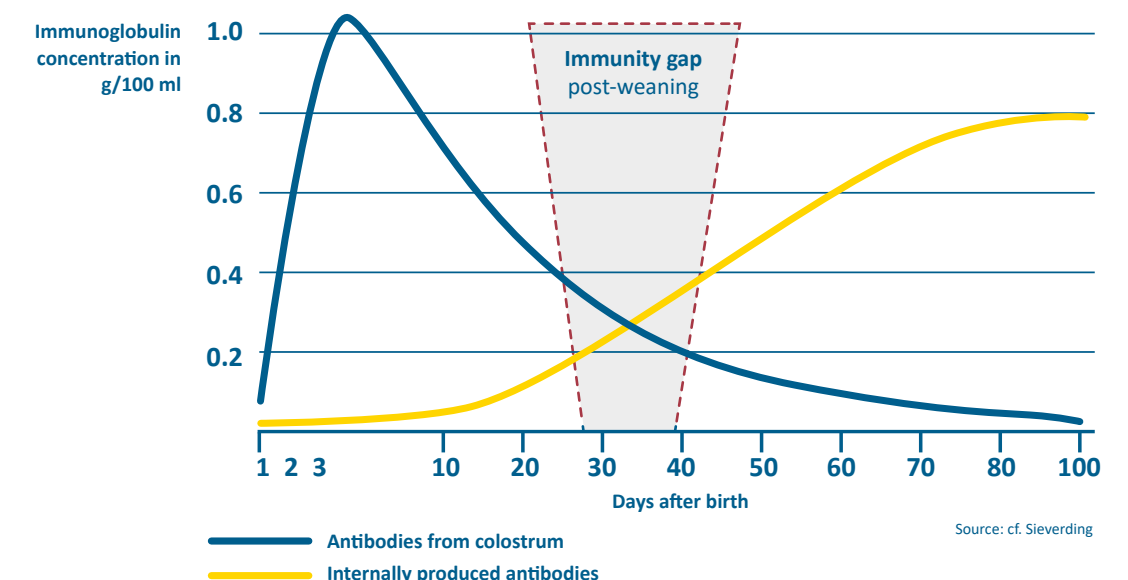
Developmental stages of the immune system

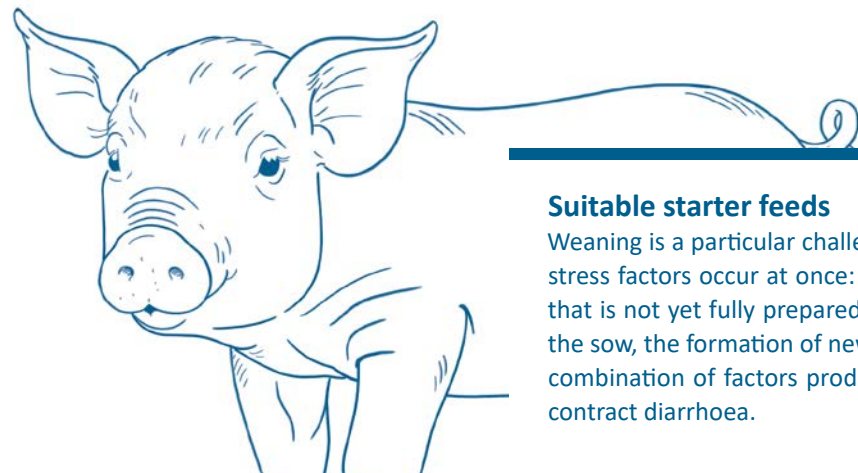
At birth, piglets have limited defence capabilities against pathogens (known as innate or cellular immunity). However, this is not sufficient for adequate protection. To survive, they need to feed on colostrum that is adapted to the specific microbial environment on the farm. Colostrum contains the antibodies necessary for their targeted defence against pathogens. In addition to antibodies, newborn piglets also absorb immune system cells from the colostrum, which are particularly important for the production of antibodies in the intestinal mucosa. Throughout the suckling phase, piglets rely on the antibodies ingested with colostrum to successfully ward off diseases. Their own antibody production only develops slowly. However, as maternal antibodies are metabolised over time and piglets' ability to produce sufficient antibodies themselves develops with a delay, piglets enter an immunity gap precisely at the time of weaning (see Fig. 3). This makes it all the more important to strengthen their gastric barrier and thus reduce the number of orally ingested pathogens before they reach the intestine.

2 Development of gastric acid production in piglets



3 Around the time of weaning, piglets have only few antibodies to defend themselves against pathogens (immunity gap)





Suitable starter feeds

Weaning is a particular challenge for piglets. During the weaning period, numerous stress factors occur at once: a still immature immune system, an intestinal system that is not yet fully prepared for plant feeds, stress caused by the separation from the sow, the formation of new social groups, and increased microbial pressure. This combination of factors produces a high-risk situation in which small piglets often contract diarrhoea.

A suitable starter feed can contribute significantly to piglet stability and thus to successful weaning:

- Sources of high-quality, easily soluble protein such as whey powder, soy protein concentrate, potato protein, plasma protein or fish meal support easy digestibility in the small intestine. As a result, less protein passes through to the large intestine, which helps stabilise the digestive system and supports a balanced intestinal flora.
- Starter feeds should also contain sources of insoluble fibre for protection, as part of the protein will remain undigested even with the best precautions. Insoluble fibre balances the negative effects of undigested protein. This reduces the establishment of unwanted microbes in the intestines and thus piglets' susceptibility to diarrhoea.
- Strongly buffering components such as crude protein and calcium additionally impair low pH values in the stomach, and their content in feeds should therefore be kept to a minimum.
- The use of acids is an efficient method for boosting low pH levels in piglets' stomachs. This supports the gastric barrier and protects piglets against ingested pathogens. In addition, the enzyme pepsin, which is important for the initial digestion of plant proteins, is only active in an acidic environment.
- The use of probiotics supports a healthy intestinal flora and assists the intestinal bacteria in fighting pathogens. This is particularly important, as the stress that inevitably accompanies weaning and the change in feed composition can upset the intestinal flora.

Piglet rearing

Once the difficult weaning phase has been successfully completed, piglet rearing enters a calmer phase. The gastrointestinal tract and its complex functions have largely matured, the immune system has strengthened, and piglets' internal production of antibodies is in full swing. However, piglets still need support from various feed factors to maintain a stable, well-balanced intestinal ecosystem. When formulating feed mixtures, it is now possible to feed them less highly refined ingredients, such as conventional soy meal, and shift the focus to maximising the piglets' growth potential.

Short & CONCISE

- Piglets depend on the antibodies from the sow's colostrum for a functional immune defence.
- Piglets' intestinal function develops over time and needs support to be able to digest plant-based feeds.
- Weaning is a particular challenge that can be mastered with a suitable starter feed.

SCHAUMANN's active substances – your key to greater success in the sty!

Schaumann's active substances for pig feeding are the result of customised research.

ISF GmbH Schaumann Research develops and tests our active substances for modern, sustainable and efficient feeding in keeping with animals' needs.

Our versatile range of active substances offers farmers a wide choice of applications and comprehensive support – whether by promoting animal health, for example by stabilising the intestinal integrity of piglets with the proven Bonvital, or by ensuring high performance with Ceravital XP. Our active substances and products are specially designed to meet your needs as a pig producer. Combined with our expert advice, we offer a complete package for your success in the sty!

CERAGEL

Power from the sea

Boosts the immune system, binds toxins and *E. coli* and supports animal health.

CERABAC

Inhibits pathogens – stabilises the immune system

The probiotic CERABAC has an anti-inflammatory, immunostimulating and pathogen-inhibiting effect.

bonvital

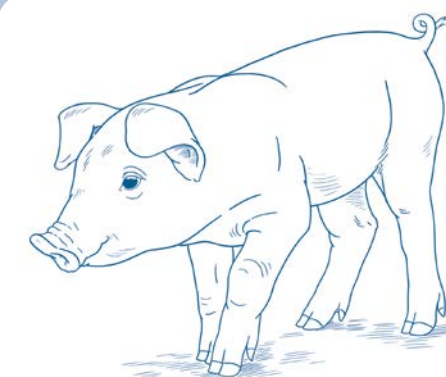
Simply healthy growth

BONVITAL bacteria colonise the intestinal mucosa and naturally ward off pathogens.

miZi

A powerful companion for all piglets

Micronised zinc oxide utilises the inhibitory properties of zinc oxide on *E. coli* at doses permitted by feed legislation.



miCu

More economical use, greater safety

Micronised copper increases the antimicrobial effect, ensures maximal stabilisation of the intestinal flora and thus promotes piglet health and performance.

SCHAUMACID

Acid combinations for every situation

Products from the SCHAUMACID line improve feed hygiene and support the gastric barrier and digestion.

CERAVITAL^{XP}

The amino acid booster

Increases the availability of amino acids from protein in the feed and supports the integrity of the intestinal mucosa.

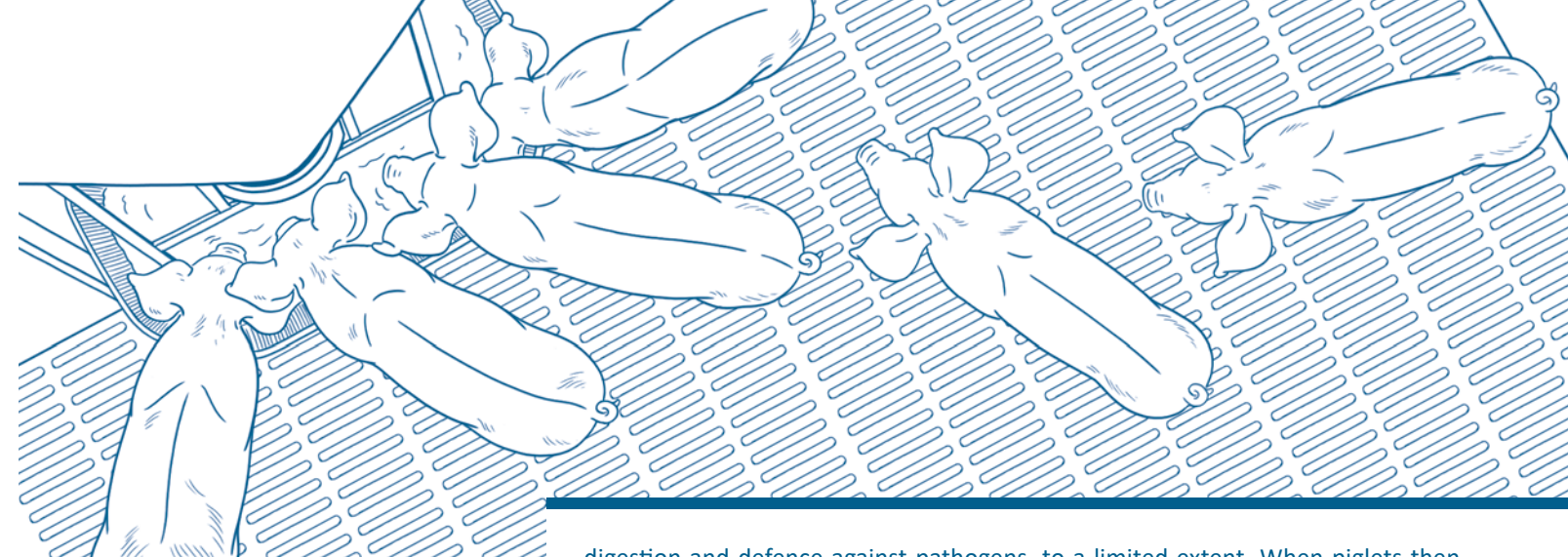
PIGSAN

Sustainable and with double strength

This sustainable, innovative active substance is an optimal combination of butyric and caproic acid. It combats pathogens and ensures a healthy gut.

Weaning management

Weaning marks the beginning of a new phase in piglets' lives that is crucial for their growth and further development.



Key factors for successful weaning:

- Continuous feed intake
- Stabilised intestinal flora
- Strengthened digestive processes to ward off pathogens

Post-weaning, it is particularly important to provide optimum support for piglets' intestinal health. To prevent gastrointestinal problems, it is essential to avoid a feeding deficit, despite the generally stressful situation that piglets find themselves in, including a change of housing, the separation from the mother sow and the transition from the milk bar to a plant-based diet. All these stress factors make piglets susceptible to disease, as neither their immune system nor their digestive system are fully developed. This results in a decline in performance, which can lead to piglet losses in the worst case.

Avoid a post-weaning feeding deficit!

Studies have shown that around half of all piglets do not consume any feed on the day they are weaned. Because piglets eat little or nothing during the night, many newly weaned piglets will not feed for up to 24 hours without intervention. When you consider that sows suckle their piglets every hour, it quickly becomes clear that this lack of feed intake means a huge change for the piglets.

Fig. 1 shows a frequently observed post-weaning effect: A low feed intake is followed by overeating and another collapse in feed intake, resulting in a vicious circle. This has a massive impact on the gastrointestinal tract. Without feed intake, the intestinal mucosa suffers severe damage, as the cells are mainly supplied with nutrients directly from the feed. As a result, the intestine can only perform its core tasks, i.e.

digestion and defence against pathogens, to a limited extent. When piglets then consume large amounts of feed at once, their reduced digestive capacity is massively overtaxed, and the resulting large amounts of undigested feed in the lower intestinal segments cause diarrhoea. In addition, there is now more substrate available for pathogens such as E. coli. If the intestinal defences are weakened by the previous lack of feed intake, piglets become more susceptible to infection with pathogens, resulting in the watery E. coli diarrhoea that many farmers are familiar with.

A smooth transition in the feeding regime is crucial.

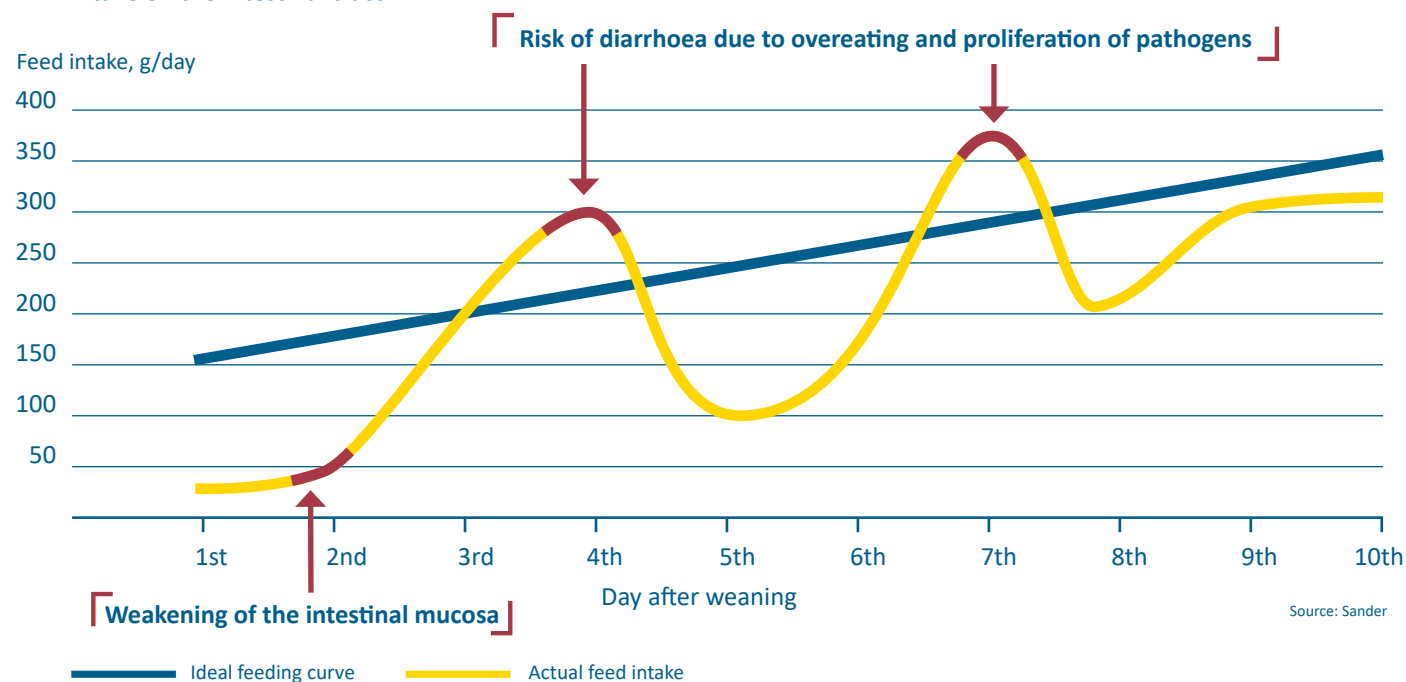
As mentioned above, piglets should be accustomed to solid feeds while still suckling. It is recommended to mix prestarter with starter feed in the last week before weaning.

To avoid the feeding deficit described above, it is helpful to offer additional feeding places in the first few days post-weaning. Offering feeds in longitudinal or round troughs allows more piglets to feed together. It is helpful to supplement the new, unfamiliar feed with a prestarter containing milk, such as Ferkelin Plus, to make the feed more palatable with a sweeter, stronger milk flavour. This is particularly important when young piglets are moved to a new pen. If feeds are also offered as a warm gruel in an extra trough, piglets will find them almost irresistible!

Expert tip:

Trough hygiene is crucial! Remove feed residues and, if necessary, clean the trough before each new feeding to ensure that no spoiled feed remains in the trough. This keeps the feed attractive to the piglets and ensures good feed hygiene.

1 Influence of fluctuating feed intake on the intestinal tract



Short & CONCISE

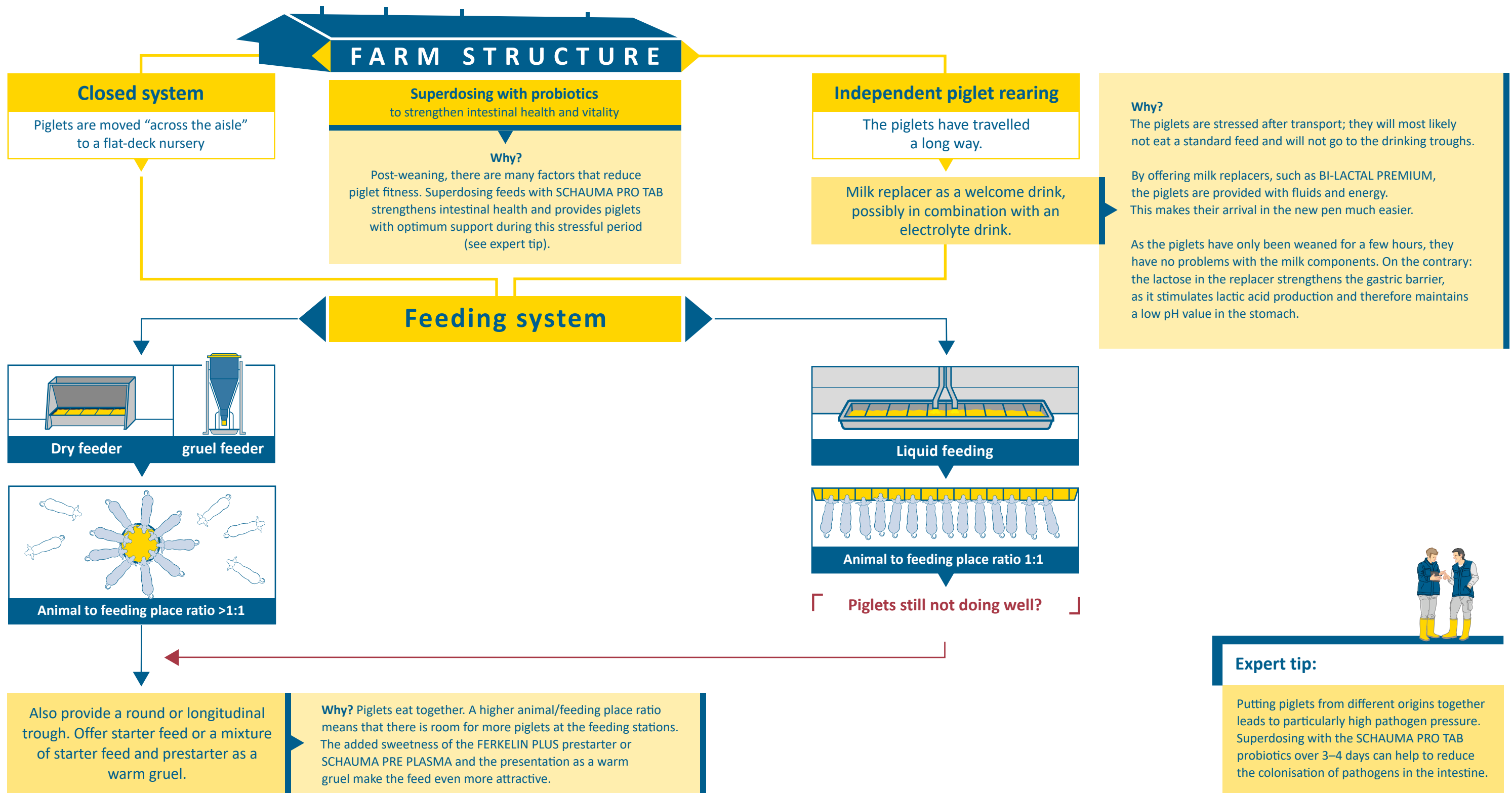
- A post-weaning feeding deficit has massive negative health consequences for young piglets.
- Avoid feeding deficits – get piglets used to starter feed even before weaning, provide additional communal feeding places in the rearing pen and blend starter feed with prestarter containing milk, such as FERKELIN PLUS, in a warm gruel.
- There is no universal weaning concept. Each intervention must be selected in the context of the given environment.

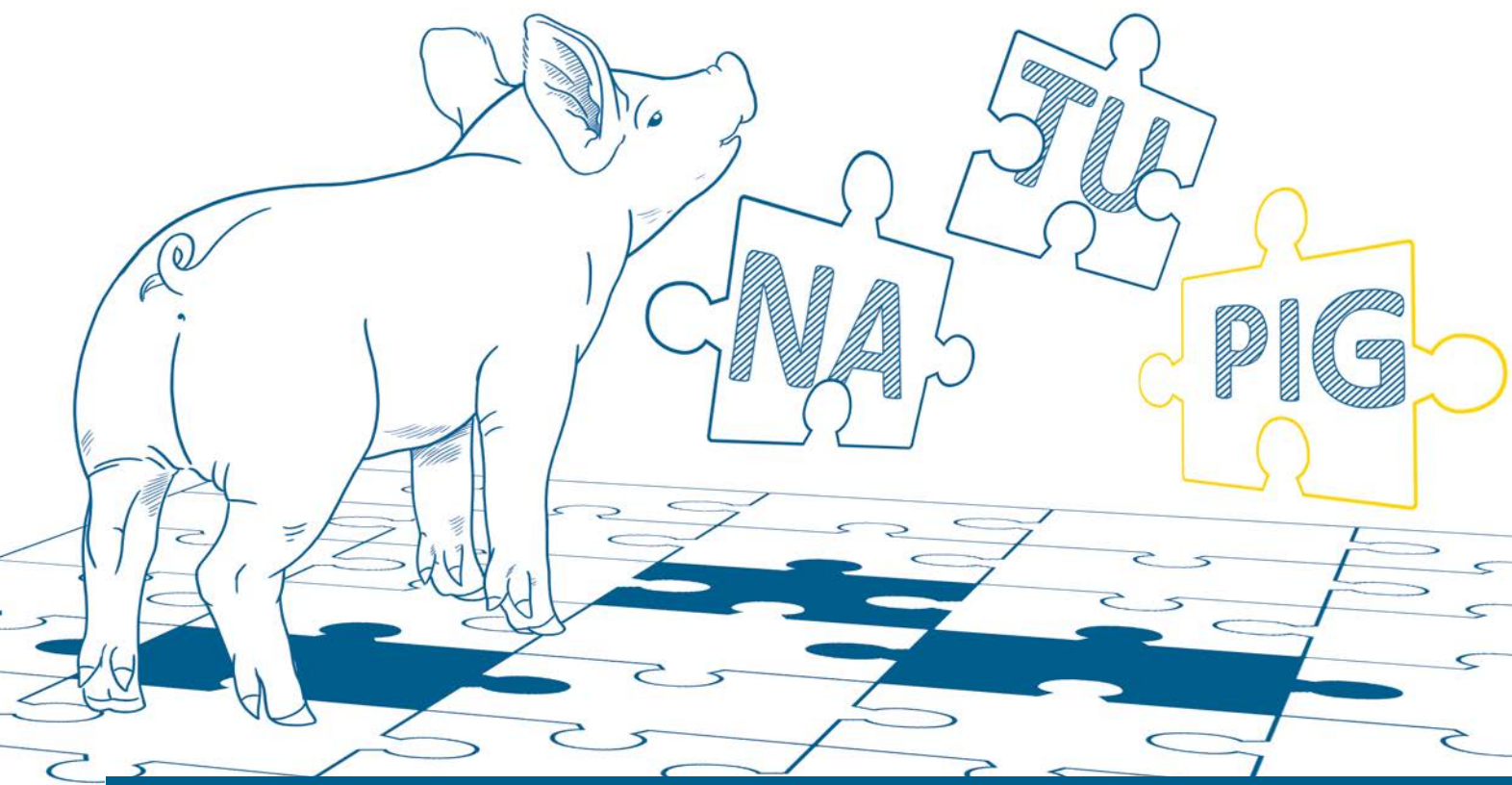
Targeted action – measures for optimal piglet rearing

Every farm faces individual challenges based on its structures and processes. Tailored interventions need to be implemented in the context of existing conditions to provide targeted post-weaning support for piglets.

It makes a big difference to the piglets whether they are only moved “across the aisle” to a flat-deck nursery or whether they are transported for 4–5 hours. The feeding system itself also has an influence on how quickly piglets get used to their new environment.

Customised measures to support piglets post-weaning





The path to antibiotic-free weaning

D The complex dietary system of the NatuPig Safety line is precisely tailored to the challenges of the weaning period. The different starter feeds from this line offer farmers customisable options for preventing diarrhoea in their piglets.

Even with extensive pre-weaning preparation and weaning management, it is often not possible to completely prevent *E. coli* diarrhoea in piglets. In some cases, the pressure of infection with this ubiquitous diarrhoea pathogen and piglets' susceptibility at such a young age are simply too great. However, by giving piglets the right feed, farmers can get much closer to the goal of eliminating the use of antibiotics altogether.

What is decisive here is that farmers consider the physiological characteristics described above and apply dietary measures to inhibit the proliferation of *E. coli* in the gastrointestinal tract (see pages 6–8). The special starter feeds in the NatuPig Safety line form a complex system that strengthens the digestive system and piglets' internal defence mechanisms, inhibits the growth of pathogenic *E. coli*, and supports the growth and development of piglets (see illustration on page 15).

The starter feeds in the NATUPIG SAFETY line

NATUPIG START 50 PLASMA SAFETY G

- Optimal supplement to grain feeds from the farm
- Ideal mixture of 50% supplement, 25% wheat, 25% barley

NATUPIG START 50 SAFETY G

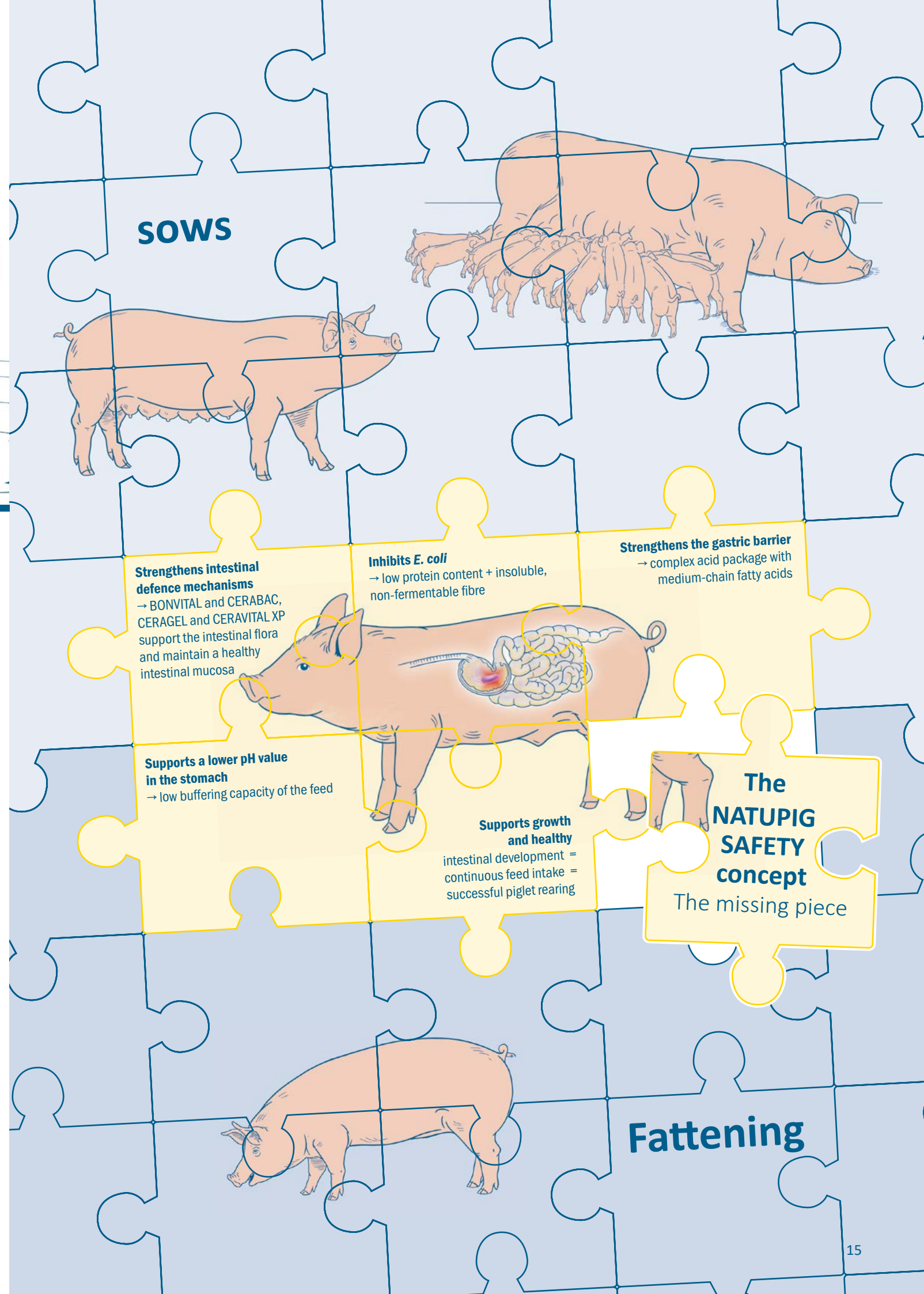
- Purely plant-based starter feed with specially digestible yeast as an alternative to plasma protein
- Ideal supplement to grain feeds from the farm in a mixture of 50% supplement, 25% wheat, 25% barley

NATUPIG START PLASMA SAFETY G

- For farmers who prefer a complete starter feed

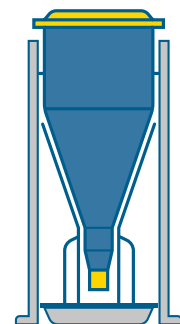
NATUPIG FA II FISCH SAFETY

- Provides tailored support during ongoing piglet rearing
- Complete feed alternative to the farms' own mixture with Natupig mineral feed



Best Practice

More safety with the NATUPIG SAFETY concept



Steffen Klindworth-Eggelmann and Achim Pohl run a successful sow farm with piglet rearing in Obernkirchen (Schaumburg district) in Lower Saxony. They have 450 BHZP Viktoria breeding sows, which are mated with a PIC 408 boar in the final stage of breeding. The stock is managed by two employees.

Following the ban on zinc-containing antibiotics, the two farm managers needed to find a different approach and decided on the NatuPig Safety concept back in the summer of 2022. Together with Schaumann expert advisor Klaus Lübken, they developed a feeding strategy that meets the legal requirements. A particular focus in this process was on intestinal stability and animal health in the weaning phase.

The right feeding strategy

Ferkelin Plus is used as a prestarter to encourage the piglets to consume creep feed before weaning. As this prestarter has a high content of milk products and digestible starch components, piglets accept it very readily, thereby accustoming their digestive systems to solid feeds. Starter feed is added from the 18th day of life (see Fig. 1).

The flat-deck pen is equipped with a small batch mixer and sensor-controlled automatic feeders. This ensures that starter feed can always be metered out freshly to the weaner piglets in small quantities to ensure a high feed intake. An additional dose of 10% crushed oats has proven to be effective during periods of stress.

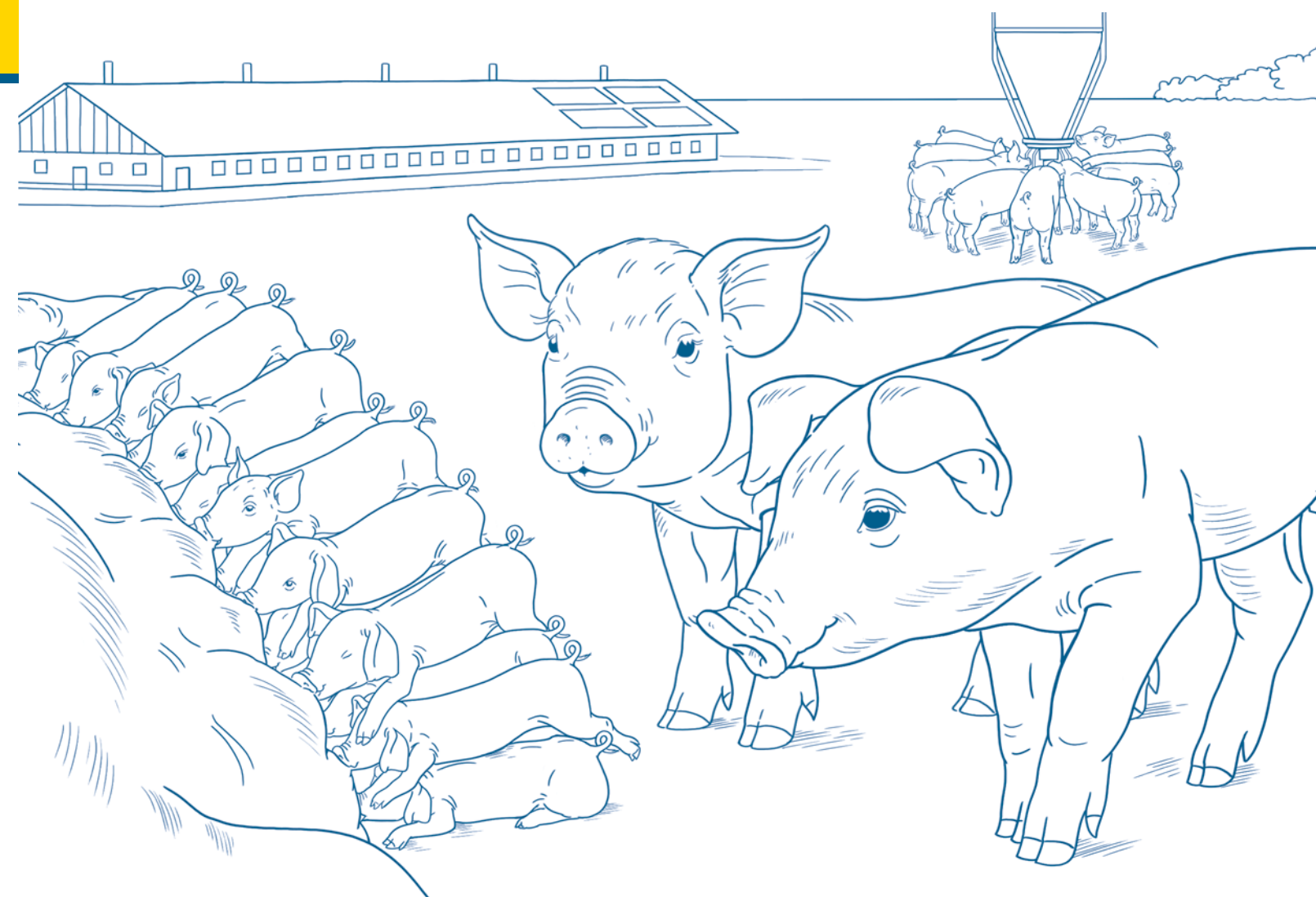
After the piglets have been fed pure starter feed for 7 days, the feed is blended with FA II (multi-phase approach), which then serves as the piglets' base feed from day 22.

By implementing the pioneering NatuPig Safety feeding concept, the farm managers reduced their average loss rate to just 0.6% over the entire rearing period.

The Schaumann team wishes the Klindworth-Eggelmann and Pohl families all the best for the future and, of course, continued **success in the sty.**

1 Feed mixtures in piglet rearing

	Weaning	FA II
Raw material	Percentage	
NATUPIG START 50 PLASMA SAFETY	50.0	
Grain maize	18.8	19.6
Barley	30.0	22.9
Triticale		15.3
Crushed triticale		15.0
Soy meal		19.8
Canola oil	0.7	1.6
SCHAUMANN FIBRE CONCENTRATE		0.5
SCHAUMACID PROTECT	0.5	0.8
NATUPIG F 98-4.5 FIBRE SPECIAL		4.5



Reliably stable performance

From safety to performance: Piglet rearing is a dynamic process, and so is feeding. While the initial focus is on ensuring stable digestion, this gradually shifts towards ensuring high rearing performance.

In the first few weeks after weaning, the feeding strategy focuses on dietary aspects. These are all designed to ensure continuous feed intake and at the same time prevent diarrhoea in the herd. If this critical stage is successfully managed, the piglets will be fitter throughout their development and often have fewer problems, providing a sound basis for successful piglet rearing. Farmers can then focus on promoting animal growth and muscle development.

Keeping an eye on intestinal health

However, intestinal health should not be forgotten, even after piglets have reached a more robust stage of their development. Piglets' immune systems take some time to develop fully, and there are many different infectious agents that can make life difficult for the animals. A healthy intestine plays a crucial role in effectively supporting piglet development and ensuring that they grow into robust, high-performing animals.

A new challenge

In piglet rearing, ear tip necrosis often occurs around three weeks after weaning, which can lead to massive problems in further rearing. These lesions, i.e. tissue damage to the ears, develop as part of a multifactorial process and therefore have many possible causes (see info box on page 18).

One of the key triggers, or at least co-factors, for ear tip lesions is unstable intestinal health. The change in piglet feed can lead to intestinal inflammation or the formation of toxins in the intestines, which puts strain on the overall piglet organism. This often manifests in changes to the tips of the ears, which can be limited to superficial inflammation, but can also extend to deeper tissue damage (necrosis).

If the lesions become infected with bacteria, what started out as small sores can quickly become a major problem, and piglets can even lose large parts of their ears. Additionally, ear tip necroses can also trigger behaviours such as ear biting and

Farm managers Steffen Klindworth-Eggelmann and Achim Pohl report:

"In 2022, we invested in new grinding and mixing technology to ensure that our feed base meets the highest standards of hygiene and quality. We now mix our own grain with purchased protein components and Schaumann supplements and mineral feeds to produce the best quality feed."



cannibalism, as affected animals tolerate other piglets nibbling on the itching sores on their ears.

The challenge is to identify this problem early and take steps to stabilise intestinal health in order to minimise ear tip lesions.

Optimising piglet management and feeding

When piglets are at risk, it is vital to improve the housing conditions in terms of stocking density and ventilation, and to stabilise the digestive processes of the animals. Stress (see info box) plays a key role in the development of ear tip necrosis.

An adequate supply of crude protein is essential

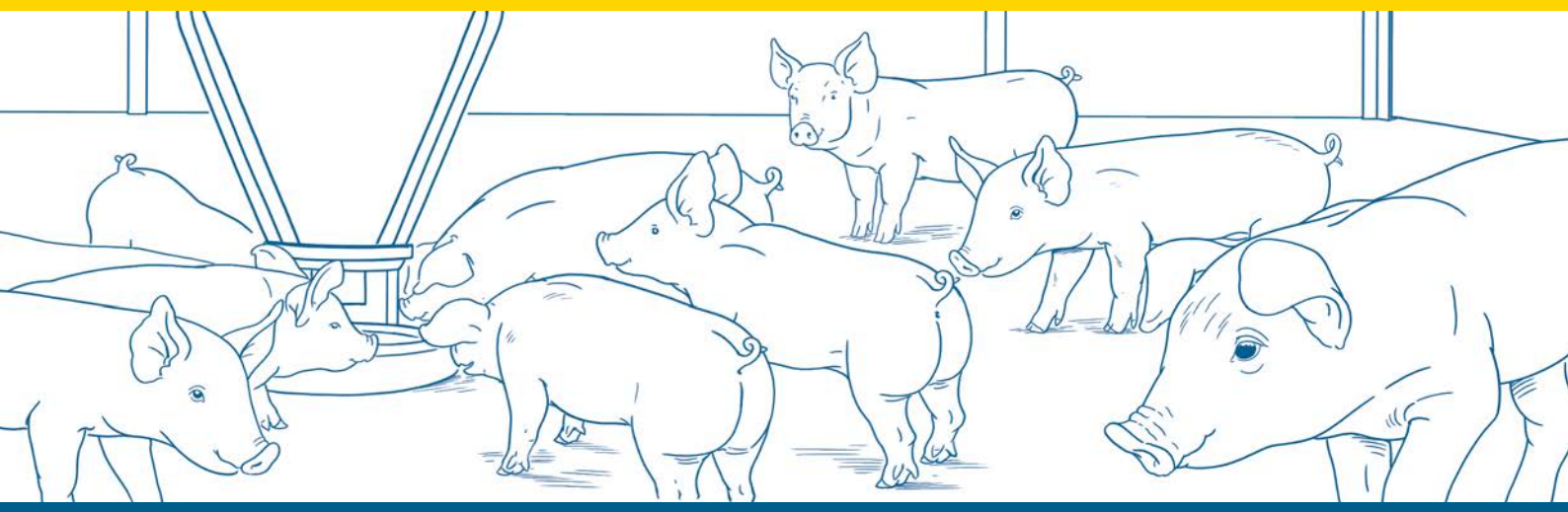
One way of stabilising the animals is to feed them a little longer on the previous feed, which is generally of a higher quality. Given the requirement to strongly reduce the nitrogen and phosphorus levels in animal feeds (see Fig. 1), stress situations can lead to a lack of available amino acids for healthy immune

system function and the rapid muscle growth which the animals are genetically designed for.

An adequate supply of all amino acids is essential for high performance during this phase of piglet rearing, when muscle development becomes more and more important. If this supply is not provided, piglets are generally more susceptible to a wide range of infectious agents.

Coarser feeds are fine

Another key aspect is a sufficiently coarse feed structure (see Fig. 2) and a high fibre content of up to 5% crude fibre in the mixture. The easiest way to achieve a coarse feed structure is to use mealy feed mixtures.



Risk factors for the development of ear tip necrosis

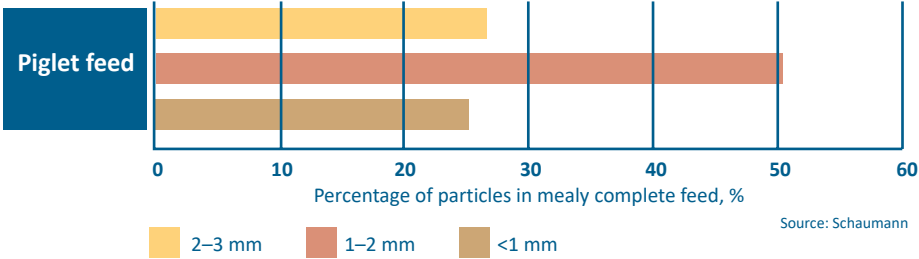
- High stocking density
- Ongoing hierarchical fights
- Poor ventilation / draughts / high concentrations of harmful gases
- Inadequate water supply (amount and/or quality)
- Abrupt change in feeds
- Unstable intestinal health
- Mycotoxin load
- Bacterial infections, e.g. with streptococci or *E. coli*
Other symptoms of infection may not be visible.

1 Requirements for strongly N and P-reduced feeds

	Crude protein g/kg	Nitrogen g/kg	Phosphorus g/kg	Potassium g/kg	Metabolisable energy (ME) MJ/kg
Strongly N/P-reduced					
FAZ I up to 15 kg LM	180	28.8	5.3	9.0	13.8
FAZ II up to 15 kg LM	175	28.0	5.0	8.5	13.4
Very strongly N/P-reduced					
FAZ I up to 15 kg LM	175	28.0	5.1	8.5	13.8
FAZ II up to 15 kg LM	170	27.2	4.8	8.0	13.4

Source: cf. DLG, leaflet 418

2 Recommended particle size distribution in mealy pig feeds for determination via a sieve



SCHAUMANN product recommendation
for fit piglets

SCHAUMA STABIL 2.0

- Combines antimicrobial activity with a stabilising effect on intestinal mucosa integrity

SCHAUMACID PROTECT

- Highly effective combination of organic acids with medium-chain fatty acids
- Controls both gram-negative and gram-positive bacteria

SCHAUMA FIT

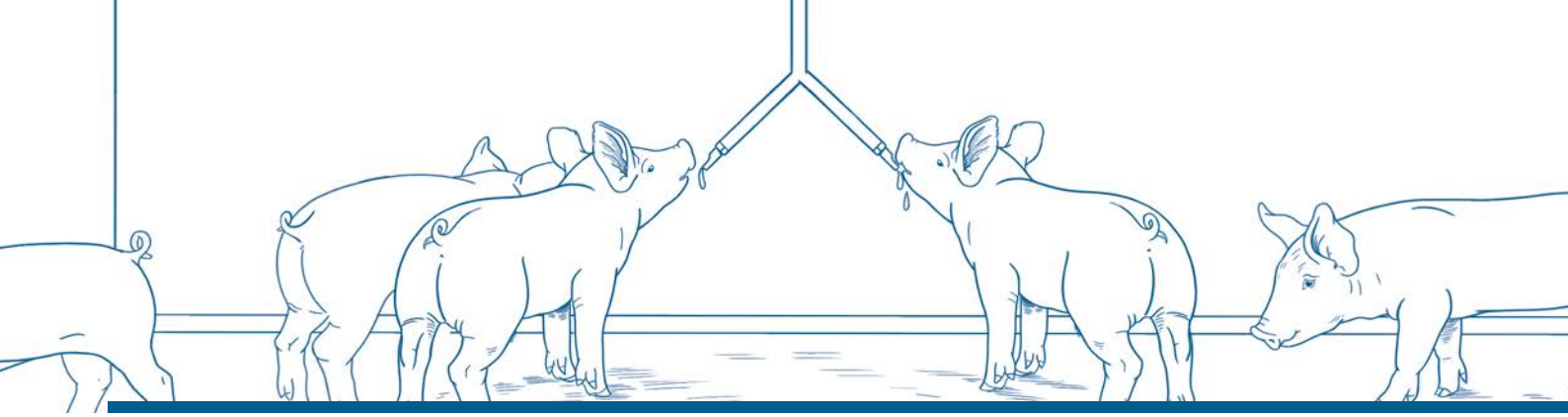
- Supplementary supply of all B vitamins and vitamins E & C
- Supports piglets in all stress situations

SCHAUMA PRO TAB

- Helps restore the intestinal flora after necessary (antibiotic) treatment

Short & CONCISE

- In this phase of piglet rearing, the focus is on high growth performance.
- At the same time, it is still essential to support intestinal health through the use of feed acids, a relatively high fibre content and a coarse feed structure.
- Instabilities following the change in piglet feed can lead to ear tip necrosis. These lesions are multifactorial (see info box) and require early intervention to minimise the effects.
- Avoiding stress and providing feed tailored to piglet needs reduces susceptibility to infection and promotes optimal development.



When water is more than just hydration

Water quality also has a major impact on piglet health and therefore on their performance.

While water supply is often not a priority, drinking water quality and supply are key factors for successful piglet production, along with housing conditions (stocking density, animal/feeding place ratio, climate management etc.) and feeding. It is not for nothing that water is described as the most important feedstuff.

An unrestricted intake of hygienically safe water is the basis for regular digestion and the smooth running of all metabolic processes.

It is important to monitor the drinking behaviour of the animals to ensure that they are taking in enough water. It is not uncommon to see piglets that have not learnt to drink water properly from a nipple drinker. Additionally, pigs, as most other animals, generally prefer open sources of water. Many experienced farmers use of this knowledge and offer both nipple and bowl drinkers to their piglets to encourage adequate water intake.

Key figures around water

- A pig consumes 2.5–3 times as much water as feed every day.
- Depending on its age, a weaner piglet needs 1–3 litres of water every day.
- There must be at least two drinkers per pen, in larger groups at least 1 drinker per 10 piglets.
- The ideal flow rate for weaner piglets is 0.5–0.7 litres per minute.

Splash out! Water quality

Drinking water quality can be improved by a few simple measures:

- **Clean drinking troughs and water pipes before restocking pens:** Drain all drinkers until the tap runs cool and fresh before stocking new piglets. Stale, stagnant water can be home to a cocktail of different, potentially pathogenic microorganisms – draining largely flushes these out of the pipes and troughs. This makes sure that piglets get clean, fresh water right from the first sip from the drinking system.
- **Remove pipe sections with dead ends:** The minimal water exchange in these sections allows biofilm to form, providing a breeding ground for many bacteria (see Fig. 1).
- **Monitor water quality:** When using well water, it is important to monitor the water quality. High concentrations of certain trace elements, in particular iron and manganese, reduce water palatability and accelerate the formation of biofilm.

Schaumann product recommendations for clean drinking water

SCHAUMADES CLEAN WS

- Continuous dosing provides general drinking water sanitisation and inhibits biofilm formation
- Works on the basis of hydrogen peroxide, enhanced by silver ions
- Neutral taste that does not inhibit water intake, in contrast to conventional chlorine compounds
- Disinfection for cleaning between 2 groups: leaving a high product concentration in the pipe system for several hours effectively removes biofilm

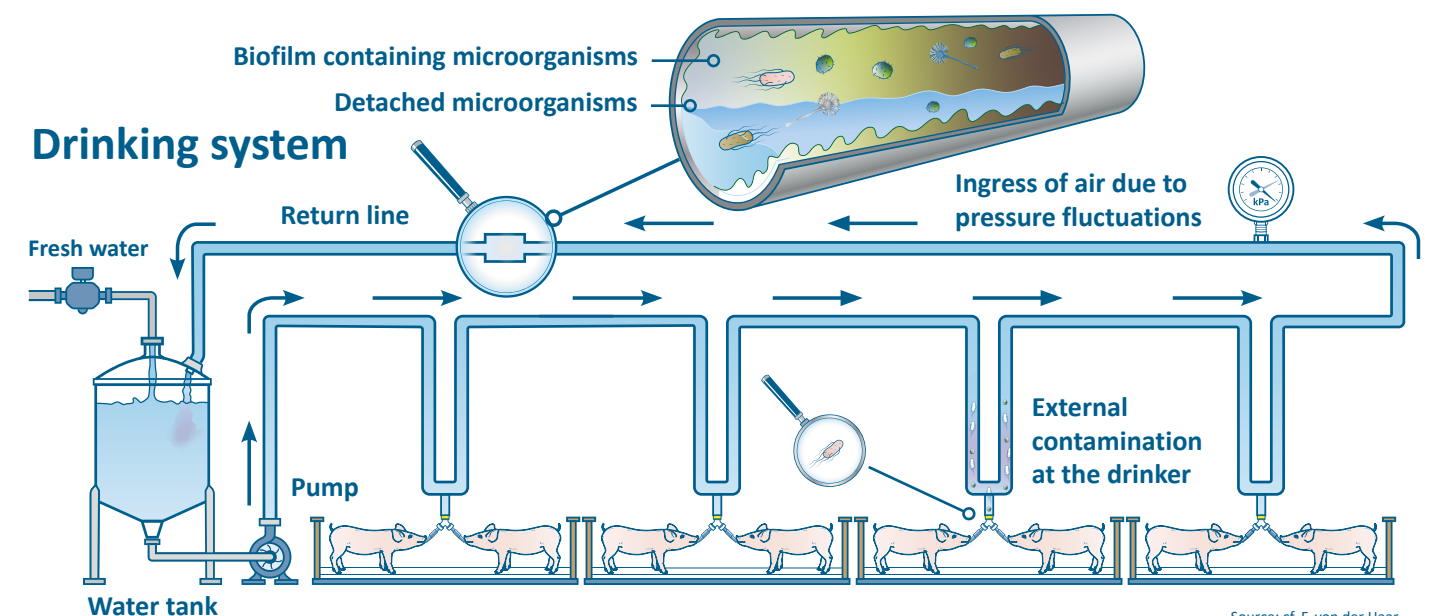
SCHAUMACID AQUA

- Combination of different organic acids specially designed for use in drinking water
- Makes a valuable contribution to stabilising piglets' intestinal health
- Inhibits the build-up of biofilm in the pipe system (in the presence of acid-tolerant microorganisms, biofilm formation cannot usually be completely prevented)
- Initial use of acid via the drinking water dissolves existing biofilm (drain the water from the system until it runs completely clear)

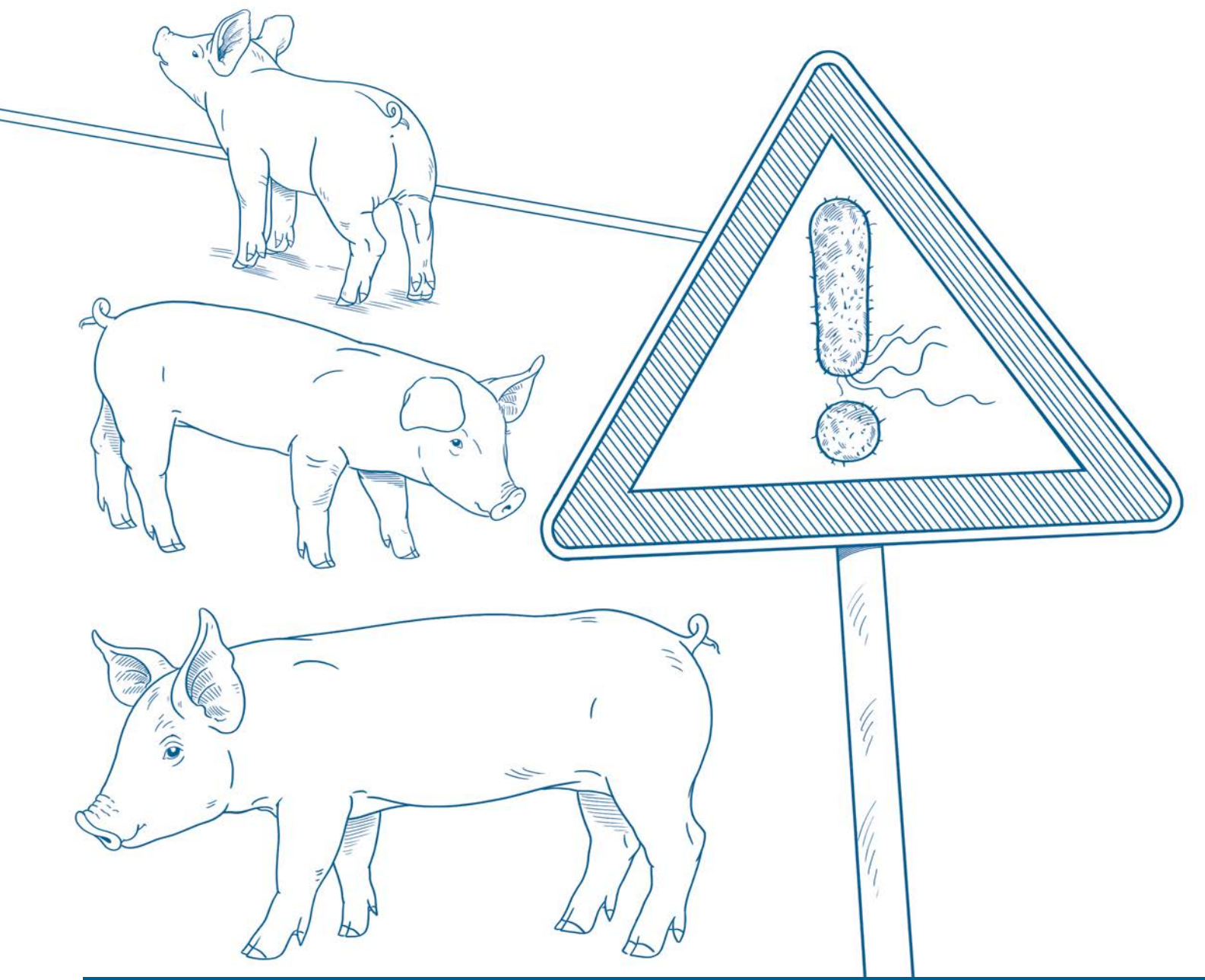
Short & CONCISE

- Water is the most important feedstuff and has a decisive influence on piglet performance and health.
- Even simple measures such as draining stagnant water from the system before stocking piglets can significantly improve water quality.
- The daily water intake per pig should be 2.5–3 times the amount of feed (weaner piglets approx. 1–3 litres/day).
- It is important to provide a sufficient number of drinkers with an optimum flow rate. Offering a combination of bowl and nipple drinkers can support water intake.

1 Biofilm formation in water pipes



Source: cf. F. von der Haar



A well thought-out hygiene concept

The microbial environment in the farrowing bay substantially affects the development of piglets. A good hygiene concept effectively supports piglet health from birth.

Successful weaning requires holistic management, starting even before sows are stocked and continuing through to farrowing and the actual weaning phase.

The influence of the microbiological environment in the farrowing pen on piglet health is often underestimated. Some infections acquired in the farrowing pen only show symptoms after weaning. Most of the time, these pathogens enter clean farrowing bays via the sow. The sows themselves often do not become ill, as their intestinal flora is already fully developed compared to that of young piglets. The digestive tract of unborn piglets, in contrast, is devoid of microorganisms – the

intestinal flora only begins to develop after birth. At that time, the gastrointestinal tract of piglets is literally flooded with microorganisms.

Both “good” and “bad” microorganisms enter the digestive system of piglets directly from the sow and from the environment. All interventions must therefore aim to suppress “bad” microorganisms as far as possible and promote the colonisation of the environment with “good” microorganisms. This also helps sows to produce high-quality colostrum that is adapted to the specific conditions on the farm.

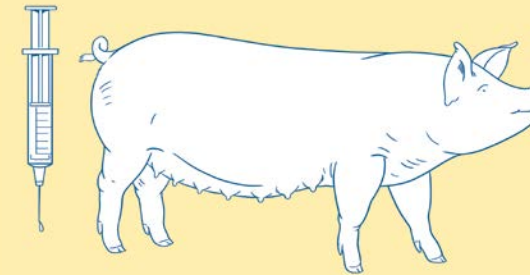
A thorough approach to hygiene

A targeted approach to hygiene begins long before farrowing. There are many steps that contribute to success, from careful integration of gilts to a tailored vaccination programme, the minimisation of pathogens in sows’ intestines and on their skin, and general farrowing pen hygiene:

SCHAUMACID

Pregnant sow

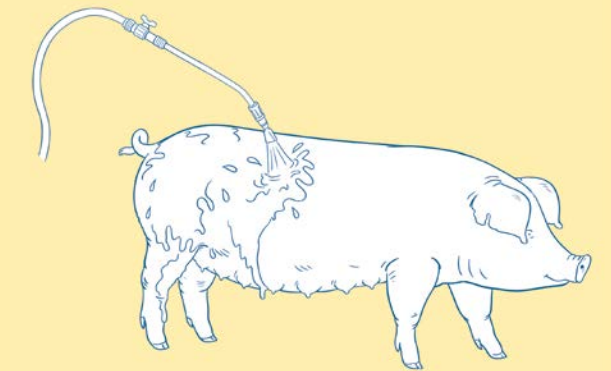
Preparation with appropriate vaccinations and the use of SCHAUMACID feed acids to reduce intestinal pathogen loads.



Washing

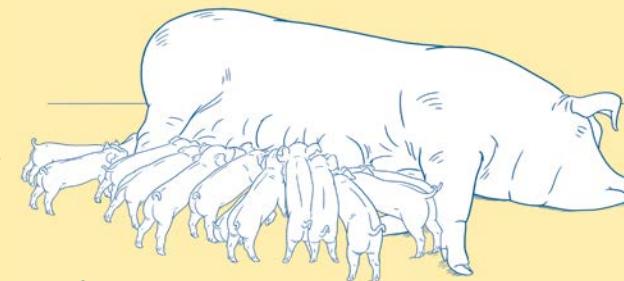
Before transfer to the farrowing bay

Washing sows removes pathogens on the skin.



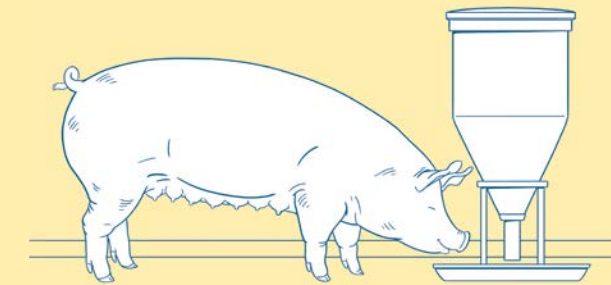
For farrowing

A clean environment and the use of the PROFIDRY LB hygiene powder ensure dry, hygienic surfaces and support piglets’ resilience.



Feeding

The use of BONVITAL in feeds acts as a protective biological shield in sows’ intestines and supports the colonisation of the farrowing bay with good microorganisms.



PROFIDRY

BONVITAL

Short & CONCISE

- Farrowing bay hygiene has a significant impact on ongoing piglet health.
- All management measures must aim to inhibit bad microorganisms and promote good ones.
- Hygiene powders, such as PROFIDRY LB, ensure a dry environment and promote piglet health.



Our @copigright - Your success



Find out more from your
SCHAUMANN expert advisor or at
www.schaumann.info





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