Getting the best value from the genetic potential of your sows

Sows' prolificity is increasing, which means we need to update the attention we give to them in order to convert the extra piglets into extra pigs for market without affecting their reproductive career.

The more piglets you get the better you are; the more hogs you deliver to market, the better you are; the more your sows are producing, the better you are. This is the challenge we shall discuss in this article.

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Farrowing and lactation are crucial periods in the life of a sow. Beyond performance, these will impact its health, career and longevity and ultimately its contribution to the profitability of the farm.

Moreover, the prolificity of sows is increasingly high. This presents additional risks for the sow (longer farrowing, reduced feed consumption, dysgalaxia, etc) but also for the piglets, whose survival and growth are reduced.

Farrowing and lactation periods are critical

Weaning large litters with heavy and uniform piglets without negatively impacting the sow is indeed essential to reap the economic benefits of this prolificity with serenity.

Farrowing and lactation are periods associated with high levels of inflammation and oxidative stress in the sow, leading to the depletion of the immune system.

Fig. 1 shows the cascade of physiological phenomena from farrowing to the next gestation. This diagram illustrates the interactions between the different stages and their succession.

It is easy to understand that in a context of hyperprolificity, sows often experience longer and more tiring deliveries. Piglets are often smaller, less vigorous, and more fragile. They take a longer time to get up and find the udder to drink colostrum. This supply of energy and antibodies is therefore delayed and reduced, which hinders the piglets in their start-up phase.

Hyperprolificity and its cascade of consequences on sows and piglets

As a result, stimulation of the sow's udder is reduced. It can be problematic, as this stimulation by the piglets' contact and grunting stimulates the production of oxytocin and prolactin, which allows the ejection of milk.

This udder stimulation, by maintaining prolactin (and oxytocin) levels, is essential to optimise the sow's milk production but also to promote uterine involution and prevent the possibility of coming into heat during lactation.

It is a virtuous circle: the more robust the piglets are, the more they stimulate the udder and the milk production, and the more they benefit from this quantity of milk. This optimises their health and considerably reduces the risk of wasting, stalling during lactation.

Weaned piglets are therefore more numerous, larger, and more homogeneous, making it easier for them to start out with a heavier body weight. Weaning good litters also allows for a clear and sharp drop in prolactin, which triggers a peak in oestrogen and therefore a sharp and grouped coming into heat with a maximal number of mature follicles. This is the optimal context to guarantee a short weaning-to-oestrus interval, a high fertility rate and numerous and homogeneous piglets in the next cycle.

Never forget to check your management

In addition to hyperprolificity, many other parameters can affect the comfort of the sow during farrowing

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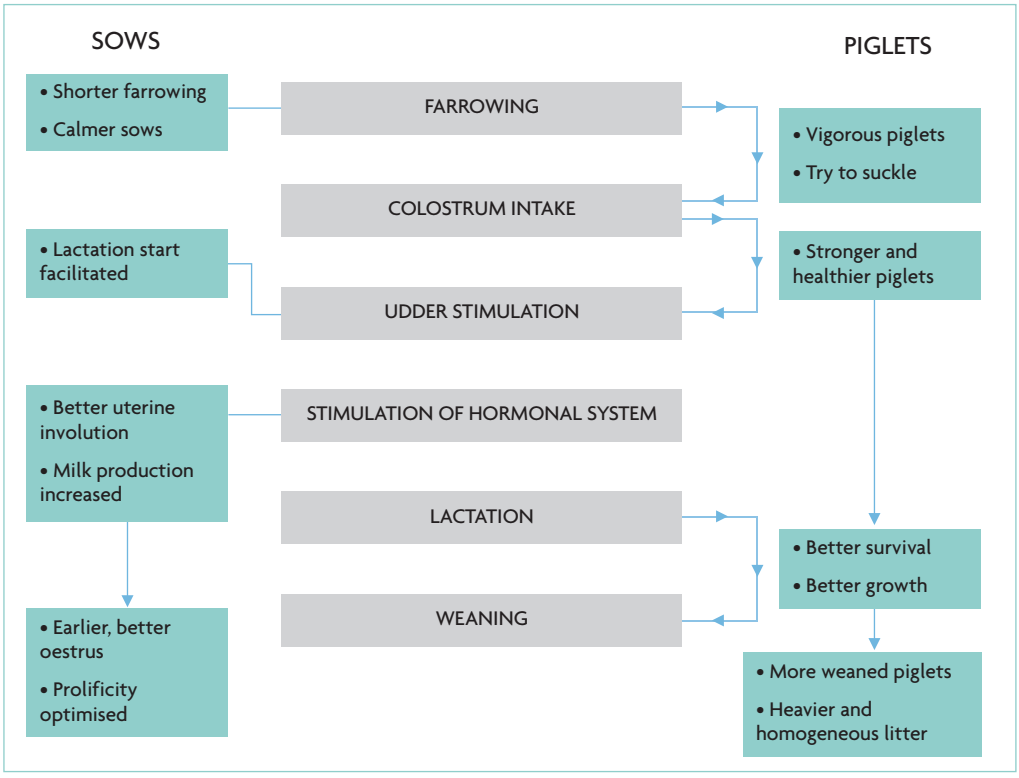
Fig. 1. The cascade of physiological phenomena from farrowing to the next gestation.



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and therefore its optimal course. Gilts, for whom farrowing is a new experience, are discovering a new environment and are experiencing new physiological changes, which can lead to stress.

Heat stress is common in the farrowing house as the sow's thermoneutral temperature (17-20°C for a lactating sow) is often exceeded. This promotes longer farrowing with the risk of stillbirths.

Furthermore, the change of facilities, frequently associated with the switch from gestation diet to lactation diet, is an additional source of stress. All these stresses induce an increase in plasma cortisol which inhibits the release of oxytocin.

In order to support the physiology of sows during farrowing and lactation, Biodevas has developed Sowel. With its synergy of 100% natural plant extracts, this phytogenic supplementation guides the virtuous circle.

Effects of Sowel are proven and visible

In a contemporary trial at the IFIP (French Pig and Pork Institute) in France, 72 sows were allocated to two homogeneous groups at farrowing (parity, background and body conditions).

The same lactation diet was distributed from the arrival in the farrowing house (on average seven days before farrowing) and until weaning at 28 days.

The control group received the feed without supplementation, while the trial group received the feed supplemented at 1kg/MT with the phytogenic feed additive. The results are presented in Table 1.

	Trial group N=36	Standard N=36
Born alive piglets/litter	16.4	16.4
Stillborn piglets/litter	1.1	1.4
Weaned piglets/litter	13.1	12.7
Litter weight weaned	109.7	107.0
Survival rate of light piglets (≤1kg at birth)	46%	30%

Table 1. Zootechnical results show the average results of the trial.

In a hyperprolificity context (17.5 total births/litter), the supplementation significantly reduced farrowing times, by an average of 40 minutes compared to the control. This improved piglet survival during farrowing by 2.2 points or 0.3 stillborn piglets/litter.

Colostrum analysis, collected between 0-4 hours after the birth of the first piglet, showed a significant 12% increase in IgG levels in the sows of the trial group (97 vs 86.5mg IgG/ml). Video recording allowed observation of the behaviour of sows and piglets during farrowing.

Observation of sow posture indicated that the control sows spent significantly more time in a lying ventral position, an indicator of stress and pain.

On the other hand, a better comfort and less inflammatory state was highlighted in the supplemented sows. This gives the piglets a better access to the udder as the sows are in a lateral position for a longer time.

This improved sow comfort, combined with better farrowing and therefore more energetic piglets from birth, promoting good lactation. It resulted in an additional 0.4 weaned piglets per litter, linked to a significant decrease in mortality of light-born piglets and dehydrated or stunted piglets. The supplemented batch therefore weaned more numerous, homogeneous, and heavier litters at weaning.

Sow in a ventral lying posture, showing signs of discomfort.

Sow in a lateral lying posture for optimal suckling.

Positive feedback from many countries and different farming conditions

Numerous field trials in a variety of farm conditions confirm the economic and welfare benefits of managing oxidative stress, inflammatory states and modulating the immune system in peripartum sows. In Europe, the reduction in the use of hormones during farrowing and other treatments (antibiotics and anti-inflammatories) in lactation with a lower prevalence of mastitis and metritis is often reported by farmers. They also observe sows in better body condition at weaning and grouped coming into heat with reduced weaning-to-oestrus interval.

Summer and heat stress conditions also shows a better return from the use of Sowel. In Asia, farmers have observed a decrease in mortality of piglets during lactation, while decreasing the use of adoptions and nurse sows due to improved milk quality. Weaned piglets are more numerous and heavier (+0.9 weaned and +880g/piglet).

Sowel acts on the NRf2 pathway, which codes for antioxidant enzymes and modulates the NF-κβ pathway, which regulates the immune system and inflammation.

In this way, the phytogenic extract is helping to get the best value from their genetic potential and to deliver more pigs to the market as well as protecting them. ■

References are available from the author on request