Higher sow feed intake for better piglet performance

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ver the past 20 years, genetic progress has changed the face of pig production and its problems too. Sow hyper-prolificacy has been associated with smaller piglets, increased litter heterogeneity and mortality. During lactation, the sow nutritional needs have increased according to the litter size.

However, while modern sows have more piglets to feed, genetic selection has favoured leaner sows (less backfat). While body weight loss and fat loss are physiological processes during lactation, the loss of muscle tissue is particularly detrimental to the sow's future performance and should be avoided. Excessive weight loss (>10%) in lactation has short and long term impact:

- Wean-to-oestrus interval is increased, fertility is decreased.
- Subsequent litter size is affected, a phenomenon known as Second Litter Syndrome. A correlation has been shown between weight loss during the first lactation and sows performance in the following farrowing cycle.

Feed intake in lactation

Lactation is a very critical time for the sow, in particular early lactation, when the sow's nutritional intake is below its needs to feed the piglets. In this context, feed intake is



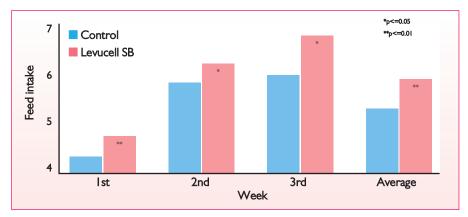


Fig. 1. Effect of diet supplementation on sow average daily feed intake during lactation.

critical and should be optimal to ensure sufficient milk production and limit sow body weight loss.

Sow feed intake can be limited by environmental stress factors such as heat stress, but also by poor digestive comfort: intestinal dysbiosis or constipation are common troubles of the peri-partum phase.

It has been shown that increased feed intake during lactation is positively associated with:

- Reduced muscle loss.
- Reduced wean-to-oestrus interval.
- Increased number of born alive piglets in subsequent litter.

Probiotic yeast

Live yeast Saccharomyces cerevisiae boulardii CNCM I-1079 is a probiotic yeast used as zootechnical feed additive in piglet and sow feed.

One of its proven benefits is the improvement of sow digestive comfort around parturition. Numerous studies have shown positive effects on sow's response to stress in peri-partum, facilitating this delicate phase: improved digestive comfort, better digestive transit, shorter farrowing duration, stimulation of sows feed intake.

A recent study was performed in 2014 in China (Huazhong Agricultural University, internal results) in order to evaluate the effects of this particular live yeast strain supplementation in sows' diet on sow digestive comfort and feed intake during

lactation and subsequent consequences on performance.

The originality of this trial is that it encompasses sow and piglets performance data (sow feed intake, body weight, backfat thickness, piglets weight and average daily gain), as well as sow digestive comfort criteria (constipation grade assessed according to the number of consecutive days without faecal emission). It also looked at long-term effects on sow reproductive performance.

Some 70 Large White sows were included in the trial, divided between two equivalent groups (average parity: 3.99). The trial lasted during the whole gestation period and lactation periods (three weeks).

Both groups of sows received the same gestation and lactation diets. In addition, the Levucell SB group received Ix10° CFU/g of feed of S. cerevisiae boulardii CNCM I-1079 (Levucell SB, Lallemand Animal Nutrition, France).

Effect on digestive comfort

First of all, this trial confirmed a positive effect on sow's digestive transit during lactation: with the probiotic yeast, the proportion of non constipated sows has increased from 12.9% to 35.5%. Moreover, there is no sow with severe constipation.

It was observed that the sow feed intake is higher for the supplemented sows than for the control group (Fig. 1).

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During the three weeks of lactation, the treated sows ate on average an extra 530g/day than the control sows. Such effect is in-line with previous results and recurrent farm observations. The positive effect of the probiotic yeast on digestive transit, hence digestive comfort, can help explain the higher feed intake. As a consequence, the sows appear to use less body reserve in lactation and body weight loss in lactation is significantly reduced (Fig. 2).

Consequently, the weaning-to-oestrus interval is reduced in the Levucell SB group.

Positive impact

Thanks to the supplementation, the sows eat more and use less body reserve for milk production. In addition, sows certainly also produce more milk, as indicated by improved piglet growth: piglets average daily gain is significantly increased for the live



Batch	Piglets ADG (g/d)			
	Week I	Week 2	Week 3	Overall
Control	161.49	263.22	270.64	232.45
Levucell SB	186.47	283.55	307.29	258.90
Difference	+24.98**	+20.33*	+36.65**	+26.45 (+11.4%)
				*p<=0.05 / **p<=0.01

Table 1. Effect of the sows' diet on piglet performance.

yeast group during the three weeks of lactation. Overall, piglets gain an extra 26.5g/day on average in the treated group, equivalent to 11.4% increase of ADG (Table I). Thus, piglets have a higher weaning weight, which is going to help them go through all this stressful stage with a better shape. This additional weight after weaning has a strong impact on the economical profits of the farm.

Conclusions

Lactation is a critical period of the pig production cycle and sow feed intake can represent a limiting factor of performance. Extra care should be taken to encourage feed intake in early lactation in order to optimise milk production and prevent sow muscle loss

Thanks to its positive effect on digestive comfort live yeast S. cerevisiae boulardii

CNCM I-1079 appears as a valuable tool for lactating sow management by helping increase feed intake, with positive impact on sow body condition, piglet growth and subsequent reproduction.

Fig. 2. Effect of diet supplementation on sow weight loss during lactation.

