Effect of Delac Dulce on sow and piglet performance via vertical imprinting

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young animal nutrition

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Introduction

Dulce (unique combination of aroma and flavours) is a proven concept to overcome the weaning dip and improve piglet performance and is successfully implemented in Delac Dulce (DD).

This experimental piglet trial at Joosten Swine Application Farm Janssen (The Netherlands) has been set up to test the effect of the application of Delac Dulce in piglet and sow feed.

The hypothesis is that Delac Dulce in sow feed will increase sow performance as well as piglet performance due to vertical imprinting. Vertical imprinting is the piglet's recognition of aroma by transfer of the aroma from sow to piglets via uterus and milk. The aroma recognition will decrease stress around weaning and therewith improve gut health and feed efficiency.

Methods

Pre-farrowing sows (n=54) were allocated to Delac Dulce (DD) or no DD (C), as well as their piglets (n=660), creating three groups:

- A1: Sow C | piglet DD
- A2: Sow C | piglet C
- A3: Sow DD | piglet DD

Sows in group A3 were fed 50 gram DD per day (25 g/feeding) from 9 days before farrowing till 10 days after, followed by 250 gram DD per day (125 g/feeding) till insemination. The born piglets were randomly allocated to a control or DD group and offered ad libitum creep (20% DD), weaner (15% DD) and starter feed (10% DD).

Piglet performance was recorded from day 1 till 66 days of age. Piglets were weighed and feed intake was measured at start, day 20, weaning (24 days), 14 days post-weaning and end of trial (66 days) . Dead and diseased piglets were recorded.

Results

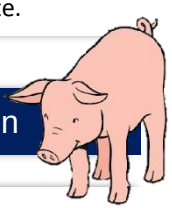
Significant difference is found in ADFI (average daily feed intake) and ADG (average daily gain) before weaning at the benefit of A3 (table). Litter weight at weaning is highest and mortality is lowest in group A3. Post-weaning the best FCR (-9%) was found in group A3 with the highest end weight (+1.8 kg). Furthermore, the smallest variation (-40%) was found at group A3, showing the best piglet uniformity when feeding DD to sow and piglets.

	Sow C Piglet DD	Sow C Piglet C	Sow DD Piglet DD
Pre-weaning (day 1 till 24 days weaning)			
Cum. feed intake (g)	165^{a}	161^{a}	228^{b}
Body weight start (kg)	1.42^{a}	1.38^{a}	1.37^{a}
Weaning weight (kg)	6.43^{a}	6.54^{a}	6.82^{b}
ADG (g)	207^{a}	218^{ab}	226^{b}
Piglets weaned / sow	12.42^{a}	11.88^{b}	12.68^{a}
Sow feed intake (kg)	148.8	147.7	151.8
Litter weaning weight (kg)	79.9	77.7	86.5
Pre-weaning mortality (%)	8.6	9.1	7.3
Post-weaning (weaning till day 66)			
ADFI (g)	548^{a}	509^{b}	511^{b}
ADG (g)	390^{a}	355^{b}	392^{a}
FCR	1.40^{a}	1.43^{b}	1.31^{c}
End weight	23.2^{a}	21.7^{b}	23.5^{a}

Effect on sow feed intake is minimal, since the trial was done in a climate controlled environment. Piglets in group A3 showed best manure and health score the first week post-weaning, indicating those piglets had the least weaning dip.

Discussion

The results show an improved piglet performance with the inclusion of DD in piglet feed versus no DD, results are even further improved when providing DD also to the sows pre- and post-farrowing. Most likely positive effects of Delac Dulce are even greater in a hot climate.



Conclusion

Overall can be stated that feeding Delac Dulce to sow and piglets results in healthier piglets after weaning, experiencing less stress which grow more efficient due to the phenomena of vertical imprinting. The improved growth, more efficient feed usage and decreased mortality results in a return on investment of >4 and >5 for using Delac Dulce in piglet feed and the combination of Delac Dulce in piglet and sow feed, respectively.