



Effect of Aleta™ on finishing pig performance in a PRRS susceptible herd

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Key Conclusions

- Aleta™ supports pigs through the finishing phase improving pig growth with an extra 100 g /day ADG per pig and decreasing time to slaughter (11 days)
- Aleta™ allowed production without in feed medication consequently being an important tool for demedicalization
- ROI of using Aleta in this herd was 3.7

Introduction

A finishing pig unit in Spain working in a All In – All Out system composed by two buildings of 500 pigs each, totalling 1000 pigs finishing spaces, suffered an outbreak of PRRS in July 2020. In that feeding herd, this mainly resulted in increased respiratory disease (due to immunosuppression). Good management practices at the farm avoided big losses in the batch affected by PRRS. Only slight increased mortality and poorer growth rates were observed, but nevertheless, the veterinarians in charge decided to look for a tool to support the resilience of the animals to PRRS infection in the following batch, trying to preventing similar losses. Aleta™ is a unique β -glucan product derived from an algae, *Euglena gracilis*, that contains high concentration of β -(1,3)-glucan, which is used for immune support and modulation to improve general health of the animals. As Aleta has demonstrated to improve the immune response against a modified live PRRS vaccine and showed inhibition of infection and replication of PRRS virus in macrophages *in vitro*, it was expected its inclusion would support the animals through a potential PRRS challenge. To assess the impact of Aleta on performance and health, growth and mortality in the finishing unit.

Methods

A 500 pigs finishing unit in the Segovia region in Spain was used for this study. The unit is composed of two finishing pig buildings fully slated. The farm applies a strict All In – All Out (AIAO) regime by building, but not by farm, with a building being filled while pigs from previous batch are still being fattened for slaughter on the other building.

Pigs are routinely tested for PRRS five to seven 7days after entry into the unit.

Approximately 250 pigs filled one of the two buildings on 27th November 2020 and this was followed by a second fill with pigs in building two taking the total animals treated with Aleta to 534 pigs.

To be able to evaluate the results at the end of the trial, a total of 4 previous batches (B1 to B4) - non treated with Aleta - were used to compare the zootechnical performance with the batch supplemented with Aleta.

To assess the impact of Aleta on the production parameters, feed used, body weight at entry, body weight (average daily gain (ADG) and feed conversion ratio (FCR) were calculated) at end of fattening and mortality were compared between these 4 previous batches and the batch in which Aleta was used. Aleta™ was included in the finishing diet at a rate of 200 g / t. The study design can be seen in table 1.

	Period before	Aleta batch
Aleta	Basal diet	Basal diet + 200 g / t Aleta

Table 1. Study design

To assess the PRRS status, 30 blood samples were taken from the batch treated with Aleta five days after the pigs entered the unit and tested for PRRS ELISA. Besides that, five oral fluid samples were collected at the same time point to assess circulation of PRRS virus by PRRS PCR.

Results and discussion

The batch of pigs, B4, (n=505) before the batch treated with Aleta, tested positive for PRRS on PCR. In the trial batch, the PRRS ELISA results on the Aleta treated group were all negative, as were the oral fluid samples.

However, pigs fed Aleta from entry into the finishing unit until the end of the production period grew 100 g / day faster than the previous batch (B4, affected by PRRS): ADG was of 0,92 kg/day for the ALETA-fed pigs vs. 0,82 kg/day for the B4-batch, respectively. FCR was similar between the Aleta treated group and previous batches. Results can be seen in table 2.

Batch	number	Initial weight	Final weight	days in	deaths	ADG	FCR
B1	540	22,15	139,90	143	6	0,82	2,77
B2	540	22,04	140,08	133	8	0,89	2,65
B3	505	19,05	146,44	151	4	0,84	2,78
B4	505	19,68	149,58	158	12	0,82	2,75
Aleta	534	19,36	143,73	135	6	0,92	2,77

Table 2. Summary of Zootechnical performance and mortality for the different groups

The batch supplemented with Aleta had a similar mortality to that of previous batches, and this so despite the fact that no in-feed medication was used after entry. Whenever needed, individual treatments are used, relying mainly on Amoxicillin as the antibiotic of choice, especially to control problems of meningitis.

ADG and FCR were used to assess the economic impact, of adding Aleta to the diet during the finishing period. The averages of the previous batches monitored, B1 – B4 (B all) were compared with the results of the group treated with Aleta. A summary of the overall performance for the whole period before and the batch supplemented with Aleta can be seen on table 3.

Batch	number	Initial weight	Final weight	days in	deaths	GMD	FCR
B all	522,5	20,73	144,00	146,3	7,50	0,843	2,74
Aleta	534	19,36	143,73	135	6	0,920	2,77

Table 3. Comparison of the zootechnical performance of the average of previous batches and that of Aleta D

Comparing B all with the batch treated with Aleta, a reduction in mortality from 1,44 to 1,12 % can be observed. It is accepted in the industry that each 1% mortality means a cost of 0,8 € / pig finished (an improvement of 0,32% was observed between B all and the pigs supplemented with Aleta).

In finishing pigs ADG improvements can benefit producers by allowing producers to slaughter the animals earlier (less days in the buildings) or to increase the slaughter weight. To assess the impact of Aleta if the pigs are sold at the same age, the result of the calculations for the economic impact of including Aleta can be seen on table 4.

	days in finishing	Extra weight / pig (kg)	Extra feed used/ pig (kg)	Extra income meat €/ pig	Value of mortality €/pig	cost extra feed €/pig	Extra profit €/pig	ROI Aleta
Aleta	146,3	11,3	31,4	16,5	0,24	8,8	6,9	3,7

Table 4. Economic analysis per pig assuming pig price as in April 2021, 1,46 € / kg and 280 € / t as cost of finished feed

Conclusion

In this finishing unit in Spain, inclusion of Aleta™ in the pigs diets during the whole fattening period, resulted in overall improved growth, reduced the reliance on antibiotics even when the pigs did not face the PRRS challenge they were expected to. Supplementation with of the finishing period with Aleta also reduced the reliance in antibiotics. Along with improved growth performance (77 g / d higher) and saving 11 days on the finishing period or 11,3 extra kg of body weight, a lower mortality rate was observed. This resulted in favourable return of investment of 3,7 for the inclusion of Aleta for the whole duration of the finishing period in the conditions of this study, demonstrating even a long period of inclusion brings economic benefits in healthy pigs commercially kept during the fattening stage.

References

1. TL-20-18183 - Positive effect of Aleta™ on PRRS virus infection of macrophages in vitro
2. TL-19-17536 - Aleta™ & vaccination, the strategy for a better protection against PRRS
3. SD-21-24266