



Aleta™ & vaccination, the strategy for a better protection against PRRS

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Key Conclusions

Aleta™ had a positive effect on PRRS vaccination as:

- **More piglets seroconverted to the vaccine at early age**
- **Higher antibody titers in response to the PRRS vaccine were observed**

Consequently, Aleta™ combined with vaccination is the strategy for a better PRRS protected pig herd, even at young age.

ABSTRACT

This trial investigates the effect of Aleta™ on the response to PRRS (porcine reproductive and respiratory syndrome) vaccination in weaned piglets. Three treatment groups of 17 piglets each, aged 35 days, were fed diets containing 0, 100, and 200 g/t Aleta™ for 14 days before vaccination. At day 14 of the trial, piglets were vaccinated against PRRS. Antibody titers were measured at 14, 21 and 28 days after vaccination. Piglet supplementation with Aleta™, both dosages, improved antibody titers, expressed as S/P ratios, compared to the control group. Additionally, piglets that received Aleta™ seroconverted faster. Findings from this trial show that Aleta™ can be used as a tool to enhance PRRS vaccination efficiency in the field, even at young age.

INTRODUCTION

Porcine reproductive and respiratory syndrome (PRRS) is a disease which is affecting pigs worldwide and has a huge economic impact, due to reproductive disorders and growth retardation. The virus is affecting all categories of pigs, from neonatal piglets to fattening pigs to pregnant sows. The financial impact in a fattening unit is substantial, but dramatic in a breeding herd. Vaccination is the most important tool to control the disease, therefore, any tool that could support this vaccination is welcome. Previous

studies in other animal species have shown that Aleta™, a beta-(1,3)-glucan derived from algae, is increasing antibody titer response to several vaccines. Consequently, the objective of this trial was to evaluate the effect of Aleta™ on PRRS vaccination.

KEYWORDS

Beta-Glucan, Aleta™, weaned piglets, vaccination, PRRS

MATERIAL AND METHODS

This trial was performed at the department of Animal Health and Anatomy of the University of Barcelona. Piglets used in the study were Landrace x Large White obtained from a PRRS free farm where piglets are weaned at 4 weeks of age. For the study, 51 piglets (4 weeks of age) were randomly selected and distributed in 3 boxes allocating 17 animals per box. Each box was divided in two pens where 7-8 animals were allocated. For the first 7 days, animals experienced an adaptation period to the new environment and were fed a pre-starter. After the acclimatization period, animals were administered Aleta™ in a starter feed at 100 g/T (Aleta 100) and 200 g/T (Aleta 200), except for the control group. Aleta™ was administered for 14 days. Animals were vaccinated immediately after the 14-day period of administration of Aleta™ with Porcilis PRRS Modified live vaccine (MSD Animal Health) intramuscular in the neck. Blood was taken for serology at 14, 21 and 28 days after vaccination. Antibody titers were measured by PRRS ELISA kit (Idexx laboratories) and expressed as S/P ratios:

$$\frac{\text{Mean of Test Sample} - \text{Mean of negative control}}{\text{Mean of Positive control} - \text{Mean of negative control}} = \text{S/P}$$

Pigs were weighted at the end of the trial (day 42) to check if there were no negative effects on growth due to the use of an immune modulator.

RESULTS AND DISCUSSION

Before vaccination, all animals were seronegative for PRRS. At 14 days post-vaccination, in both treated groups more than 70% of the animals had developed specific PRRS antibodies (75% in Aleta™ 100 and 70.6% in Aleta™ 200). In contrast, only 47,1 % of the control animals showed PRRS antibodies. Regarding the antibody titers, measured as S/P ratio, the average S/P value for the Aleta 200 group at 14 days post-vaccination was 0.91 and 0.90 for the Aleta™ 100 group, compared to only 0.52 for the control group. Consequently, when all treated animals were compared to the control group, differences in S/P were clearly significant at 14 days post-vaccination ($p=0.026$, Kruskal-Wallis). At 21 and 28 days after vaccination, the S/P ratios were numerically increased in both Aleta™ groups compared to the control group. The addition of Aleta to the feed is safe and has no negative effect on

performance as it increased final body weight numerically (40,14 kg for control group, 40,66 and 42,55 for Aleta 100 and 200 group respectively)

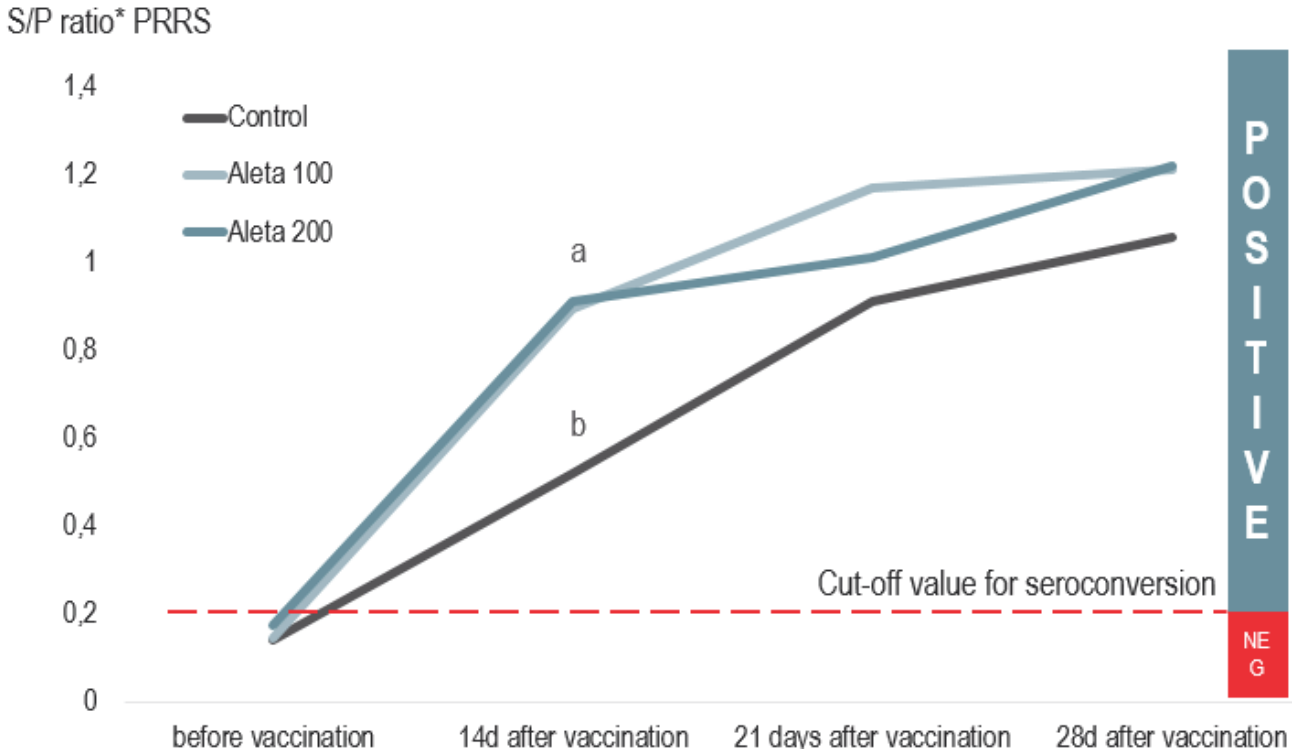


Fig. 1. S/P ratios in response to vaccination before and 14, 21, 28 days after vaccination.

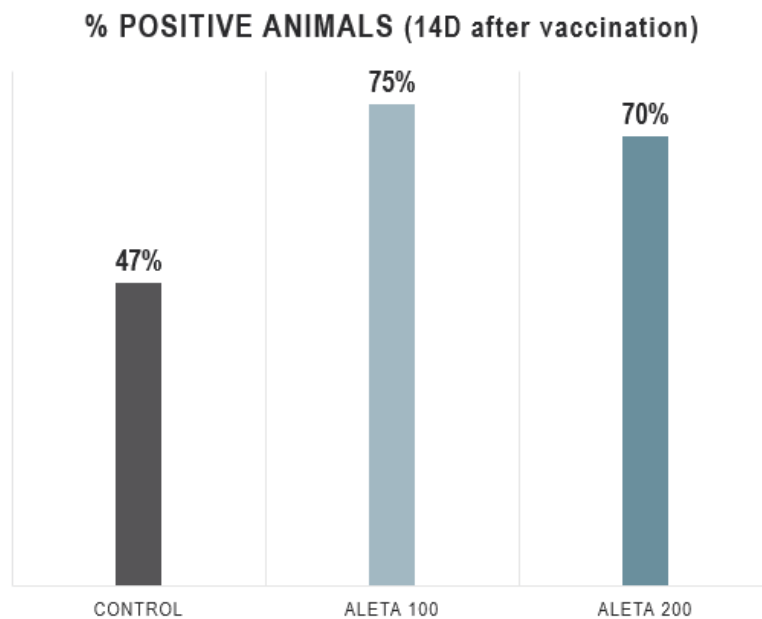


Fig. 2. Percentage of positive animals at 14 days after vaccination.

CONCLUSION

In conclusion, the administration of Aleta™ at all tested doses increased the production of anti-PRRS antibodies by the piglet after vaccination. Additionally, an increased proportion of responding animals at early age was observed in the Aleta™ groups. The administration of Aleta™ is safe as no impact on body weight was observed. Consequently, Aleta™ combined with vaccination is the strategy for a better PRRS protected pig herd, even at young age.

REFERENCES

1. SD-19-21294