



## **Aleta™, a tool to support swine influenza (SI) vaccination in gilts**

### **Key Conclusions**

**This study provides evidence that Aleta was able to improve serum antibody titers in breeding gilts vaccinated with four Swine Influenza virus isolates.**

### **INTRODUCTION**

Swine influenza virus (SIV) is a viral pathogen of the respiratory tract in pigs. The disease can affect pigs at any age. There are 2 forms: acute form, showing fever, coughing, dyspnea, apathy, anorexia, and an endemic form, showing non-specific clinical signs, such as reduced vitality, reproduction disorders in sows (return to estrus, abortions), occasionally fever followed by hypothermia, sporadic coughing. In the endemic form, the pathogen persists on the farm. Consequently, an increasing number of pig farms are permanently infected with influenza, often involving several strains, and resulting in recurrent infections with atypical clinical symptoms. There is no therapy available, since it is a viral infection which means that at best, clinical signs or secondary bacterial infections can be treated. Prevention is the best protection: biosecurity and vaccination. Most commercially available vaccines are multi-strain types.

A beta-1,3-glucan derived from algae, *Euglena gracilis*, commercially available as in feed supplementation, Aleta, is an immunomodulatory mollicute as it interacts with the immune system through the dectin-1 receptor. Aleta has previously shown to improve vaccination efficiency for multiple diseases, in several animal species. The objective of this study was to evaluate the efficacy of Aleta in gilt development diets to improve the serologic response to a swine influenza killed vaccine (SIV) with four influenza isolates (Isolate 1, 2, 3 and 4) for a 30-day period.

### **KEYWORDS**

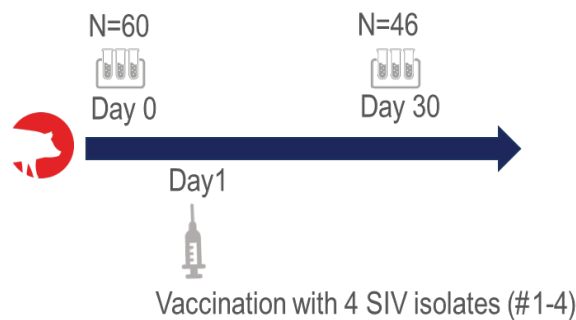
Aleta™, swine influenza, vaccination, serology

## MATERIAL AND METHODS

Sixty 6-month-old breeding gilts - in eight rooms which were housed along with other gilts - were randomly assigned to 1 of 2 treatments (8 rooms/treatment; 800 pigs/room):

1. Negative Control feed, Slv vaccinated;
2. Aleta feed - 200 g Aleta per ton of feed, Slv vaccinated.

On d0 (pre-vaccination), 60 gilts were bled per treatment (15 gilts per room; 4 rooms/treatment). On d30 (post-vaccination), the same animals were bled to establish a before and after serological profile. Since only 46 animals remained in the 8 rooms on d30 due to gilt selection rates at the breeding farm, d0 and d30 serum antibody titers were performed only on these 46 gilt samples and the change in titers between the two samples were evaluated.



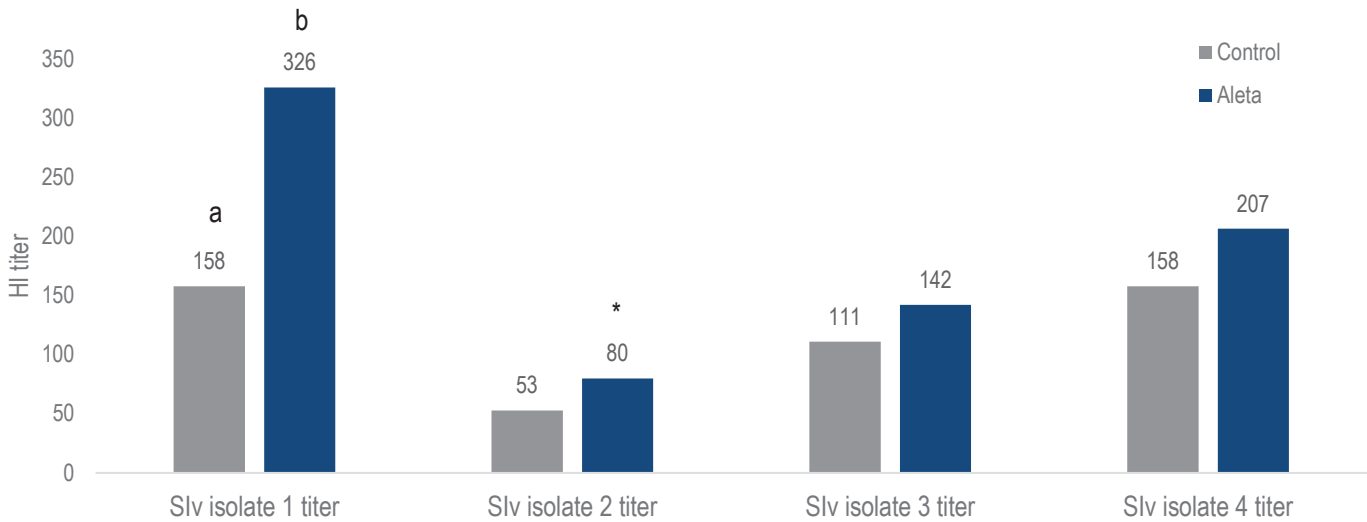
Serum antibody titers were evaluated by the using the HI antibody test. Statistical analyses were performed using JMP® (trademark of SAS Institute, Cary, NC) software and significance was determined at  $P \leq 0.05$ .

## RESULTS AND DISCUSSION

Administration of vaccine lead to an increase in serum antibody titers for all four isolates compared to pre-vaccination. Adding Aleta significantly improved Isolate 1 serum antibody titers at d30 compared to the negative control at d30 ( $P < 0.01$ ; 326 vs. 158). There was a trend for Aleta improving Isolate 2 antibody titers compared to negative control at d30 ( $P = 0.07$ ; 80 vs. 52). Aleta numerically improved SIV Isolates 3 and 4 titers ( $P > 0.05$ ), compared to the negative control group. Further, there was an association of Aleta on improving the percentage of animals of different titer category (high, medium, low) post-vaccination for Isolate 2 and 4 (Chi-square test  $P = 0.02$  and  $P = 0.007$ ).

Graph 1. Swine influenza antibody titers against the different isolates (1-4) at 30 days post vaccination.

<sup>a, b</sup> indicates the values are significantly different from each other (P<0.05), \* indicates trend for significance (P<0.10)



## CONCLUSION

Overall, these results provide evidence that Aleta has the potential to improve serum antibody titers in breeding gilts vaccinated with SIV vaccine. Feeding Aleta during SIV vaccination demonstrated an ability to increase the antibody titer response for different isolates.

## ACKNOWLEDGEMENTS

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## REFERENCES

1. AB-21-1977
2. PO-21-1959