

IMM-OP-02

TITLE

PRRS POST-VACCINAL IMMUNE RESPONSE TO MLV IN PRRS MULTIVACCINATED SOWS

Christelle FABLET¹, Patricia RENSON^{1,2}, Florent EONO¹, Sophie MAHE¹, Eric EVENO¹, Mireille LE DIMNA¹, Nicolas ROSE¹, Olivier BOURRY¹

¹ Anses, Laboratoire de Ploufragan, France

² IFIP, France

CONTENT

Background

PRRS MLV vaccines are used to prevent reproductive disorders due to PRRSV in sows. Vaccine efficacy was proven only in sows vaccinated once or twice. In vaccinated herds, sows receive multiple vaccine boosters. To date, no data are available on the maintenance of PRRS immunity during these multiple revaccinations.

Objectives

Describe the post-vaccinal immune response to PRRS MLV in multivaccinated sows

Material & Methods

The study was conducted in a farrow to finish pig herd without PRRSV circulation in the breeding herd. A sample of 40 sows/gilts was followed after 2 MLV vaccine boosters (Reprocyt® PRRS EU, Boehringer Ingelheim). Blood samples were collected 2, 4, 8, 12 weeks post-vaccination (pv). PRRS vaccine was assessed by RT-PCR, whereas PRRSV specific immune response was monitored by Idexx ELISA, virus neutralization test (neutralizing antibodies) and ELISPOT IFN γ (cell-mediated immunity: CMI). A hierarchical clustering was performed to identify clusters of sows according to the immune response following PRRS revaccination.

Results

After each vaccine booster, we detected: (i) no vaccine genome in blood, (ii) a mild increase of ELISA antibody level 4 weeks pv, and an increase in the number of seronegative sows 12 weeks pv, (ii) a mild rise in CMI overtime, (iii) an increase of neutralizing antibody levels 2 weeks pv followed by a progressive decrease until 12 weeks pv.

Three groups of sows were identified according to their response to vaccine booster: (i) sows with a high level of PRRS humoral immune response, (ii) sows with a high CMI level, (iii) sows with both weak humoral and cellular immune responses.

Conclusion

Our study shows that, according to the measured parameters, the dynamic of PRRS specific immunity after revaccination differ depending on the animal. Further studies are needed to identify factors influencing the sow responsiveness to vaccine boosters.