Control and Management of PRRS in a Commercial Farm in the Philippines

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PRRS in the Philippines

- PRRS have been blamed for many economic losses in commercial farms in the form of reproductive failures, morbidities and mortalities, including the major outbreak that started in 2007 and spread to many farms in Luzon leading to great losses.
- Samples sent to laboratories were positive for PRRS virus strain that is 98% homologous to Chinese Isolates.
- Farms have been implementing many programs to contain or prevent problems caused by PRRS.
- Aside from the PIC Nucleus and Multiplier herds, very few farms have been able to remain PRRS negative in the country, and for many eradication of the virus may not be a feasible long term solution to the problem.
Control Measures for PRRS

• Gilt Input Management / Isolation and Acclimatization
• (Partial) Depopulation and Repopulation
• All-in All-out adherence
• Virus Elimination
  – Whole herd depopulation repopulation
  – Test and Removal
• Vaccination
PRRS Transmission

- Direct transmission between pigs.
- Infected animal inputs
  - Gilts
  - Semen
- Fomites
- Non-porcine species
- Insects
Area spread of PRRS continue to be researched to determine the frequency of between herd transmission through this route.

- In a study in France it was determined that 45% of herd infected by PPRS by area spread was within 500 meters of an infected herd and 2% within 1 kilometer.
- Transmission of PRRS virus via insects has been seen possible in experimental conditions.
A Farm in Trouble

• 800 sow level farrow to finish operation
• Located in a farm estate in Angat, Bulacan
• The farm have incurred great losses in terms of poor reproductive performances and high mortality in both the pre-weaning and post-weaning sections
  • Poor reproductive performances (50-60% FR, abortion cases, early farrowings etc.)
  • High pneumonia cases / mortality in weaners and growers. >20% mortality.
The serological profile of the farm suggest that there is apparently an active infection spread of PRRS on going on the farm.
Farm PRRS Serological Profile

• Profile also shows gilts are already positive for antibodies which suggests they are starting to be exposed to the farm virus, however there are sub-populations of negative animals in the breeding herd which may be prone to subsequent exposure and infection.

• Seroconversion of piglets occur in 6-7 weeks indicating they are being challenged by field virus at this time, which coincides with start of the increase of morbidity and mortalities.
A Farm in Trouble

• Medication programs and improvement in farm practices (breeding, AIAO adherence etc.) have failed to bring performance to respectable levels.

• With the increasing prices of farm inputs the survivability of the farm is highly questionable.
Farm Location
Farm PRRS Programs

• Farm have tried to control its PRRS situation by strict bio-
  security measures, closed herd multiplication, and finally
  vaccination after determining it is the next best course of action
  considering the pig density of the area where the farm is
  located.

• Initial PRRS vaccine used was MLV-EU strain vaccine given to
  piglets at 21 days and quarterly mass vaccinated breeding
  herd.

• Although there was a dip in mortalities observed after
  vaccination, performances still needed to be improved badly.

• Mid 2008 farm decided to shift to another vaccine strain MLV-
  US strain (Ingelvac PRRS MLV®).
Farm PRRS Programs

- The same schedule was followed with the new vaccine.
- A short period after the shift, whether directly related to the program or not, farrowing and conception rates have increased (85%+ and 90%+ respectively) due to the lower incidence of recycles, pre-mature births and abortions.
- Also a remarkable decrease in morbidity and mortalities was noted.
Mortality Figures - Pre-wean

X Chart; variable: Prewean
X: 13.200 (13.200); Sigma: 1.7725 (1.7725); n: 1.

% Herd Mortality vs. months

EU Vaccine

I. PRRS MLV

18.517
13.200
7.8826
Farm Mortalities - Post-wean

X Chart; variable: Postwean
X: 15.000 (15.000); Sigma: 2.2156 (2.2156); n: 1.

% Herd Mortality

I. PRRS MLV

EU Vaccine

months
Mortality Figures - Total

X Chart; variable: Totalherd
X: 28.200 (28.200); Sigma: 3.9880 (3.9880); n: 1.

Chart from Statisca program
<table>
<thead>
<tr>
<th></th>
<th>average mortality (%)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EU Vax</td>
<td>I. PRRS MLV</td>
</tr>
<tr>
<td>Pre-wean</td>
<td>33</td>
<td>13.2</td>
</tr>
<tr>
<td>Post wean</td>
<td>21.625</td>
<td>15</td>
</tr>
<tr>
<td>Total mortality</td>
<td>54.625</td>
<td>28.2</td>
</tr>
</tbody>
</table>
Analysis

• The average mortality in all stages is lower when Ingelvac® PRRS MLV was used
• The process is also in much better control when the vaccine was used
• There is statistical significance in the differences before and during vaccination with Ingelvac® PRRS MLV
• The new serological profile of the farm shows no subpopulation of negative animals in the breeding animals, and more uniform titers at the weaner and growout animals.
Conclusions

• Although control of PRRS situations with programs without vaccination has been successful, there are some situations that warrant its use.
  – For farms that has difficulty acclimatizing gilts (isolation issues, exposure problems)
  – For farms with persistent sub population of negative animals (ab) who resists test and removal recommendations.
  – Farms located in high density areas where eradication of the virus and stabilization of the herd may not offer long term solutions

• It is still the view of many practitioners that PRRS situations will be resolved better with a vaccine homologous to the farm virus, however with the lack of facilities to determine farm strain or produce an autogenous vaccines the right choice of vaccine to use in a particular situation is vital.
Thank you for listening.