VACCINATION OF PIGLETS BORN OF IMMUNE SOWS USING THE CL CHINESE STRAIN

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Prophylaxis of Swine Fever in highly contaminated regions demands regular routine vaccination of the animals. Specific antibodies transmitted from the sow to the piglet interfere with the development of immunity of the piglet after vaccination. (1-2, 4, 5, 7-9, 10-12). A study was carried out to monitor the development and evolution of immunity in piglets vaccinated with the CL Chinese strain.

MATERIAL

The vaccine and its prior performances have already been described (7-8).

METHOD

Sows were vaccinated according to groups: 6 months or 1 month before farrowing, during the 2nd or 3rd month of pregnancy, or not at all. Piglets were weaned at 4 weeks and vaccinated between 1 and 8 weeks according to the group. The methods of titrating the specific antibodies and of challenge using a pathogenic virus were described (8).

RESULTS

Piglets born from non-immune sows - Figure No. 1 illustrates the equivalence and satisfactory development of immunity in piglets vaccinated at 1 or 2 weeks.

Piglets born from immune sows -

Evolution of immunity of maternal origin (Figure No. 2) for 13-22 weeks. Antibody titres do not differ significantly in the sow, both the evolution of antibodies of colostral origin and the protection of the piglets are not significantly different in the piglets of these two groups of sows and give preference to piglets born of sows vaccinated 6 months prior to farrowing.

Immunization (Table No. 1) - Whereas serum antibody titres are not significantly different in sow at farrowing, the immunization of piglets depends on their age at the time of vaccination and on the length of time between vaccination and farrowing for the sow. When the sows are vaccinated a long time before farrowing, this enables both passive protection lasting for more than 2 months (Figure No. 2) and a very satisfactory active immunization level (x8-28) post-vaccination at the age of 5 weeks in the piglets (Table No. 1).

Immunological evaluation - It was interesting to monitor the effect of a booster injection at 6 months in piglets born from sows vaccinated 6 months before the farrowing period, and then themselves primo-vaccinated at 4 weeks. Figure No. 3 shows that immunity is excellent 42 weeks after the booster.

DISCUSSION

The very young piglet is immunocompetent (2-4) and can be vaccinated as early as 7 days if there are no specific colostral antibodies. The difference of immunization observed between the groups of piglets born from immune sows which had equivalent serum antibody titres seems to be in relation to the time between the sow's vaccination/farrowing. This difference behaviour would depend on a difference in the nature of antibodies transmitted by the colostrum (3-5), expressed by the notion of avidity (11). In the case of a modified virus version, the piglet immunization colostral antibodies (Dominant IgM) would be more avid (high antibody titre), but less inhibitive (low immunosuppressive reaction) than the recent immunization antibodies (Dominant IgG).

CONCLUSION

In an immunologically speaking herd of animals, vaccination of piglets using the CL Chinese strain can intervene as early as the 7th day. In a primarily immunized herd, the piglets can be vaccinated when 35 days old, whilst they are still protected by the colostral antibodies. A booster injection given before the puberty of the future reproducer ensures immunity at least throughout their genetic life (4 years).

REFERENCES


Table No. 1 - Immunity in piglets born from immune sow

<table>
<thead>
<tr>
<th>Age of Vaccine</th>
<th>Immunity Level</th>
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<tbody>
<tr>
<td>1 month</td>
<td>Low</td>
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<tr>
<td>2 months</td>
<td>High</td>
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<tr>
<td>4 weeks</td>
<td>Excellent</td>
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Fig. 1 - Immunity in piglets born from non-immune sow

Fig. 2 - Colostral immunity in piglets born from immune sow

Fig. 3 - Immunity persistence after booster in piglets born from immune sow.