

**PRRS-STABILISATION OF A 6000 SOW HERD BY MASS VACCINATION**

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**Introduction and Objectives**

PRRS is one of the most costly diseases in German swine production. To prevent losses due to PRRSV mass vaccination of the whole herd with a US-strain based modified live vaccine (Ingelvac PRRS MLV, Boehringer Ingelheim) has become a standard intervention in Germany (1). This paper describes the stabilisation of a 6000 sow herd by mass vaccination and the value of statistical analysis of serological and production parameters to help making decisions and monitor the success of intervention strategies.

**Materials and Methods**

The farm is a closed, PRRS positive 6000 sow farrow to finish farm. Replacement gilts are raised within the farm and separated from the finisher herd at the age of 10 weeks. In 12/97 PRRSV-related clinic lead to a PRRSV-vaccination of all sows with Ingelvac PRRS MLV. Piglets remained non vaccinated. Incoming gilts were vaccinated twice before entering the sow herd. In 4/99 PRRS vaccination of the sow herd was stopped and only gilts were vaccinated. To monitor the PRRSV situation a monthly serological surveillance was implemented with 5 random samples taken from groups as shown in table 1 below. The IDEXX PRRS ELISA was used.

Table 1: Grouping for serological monitoring

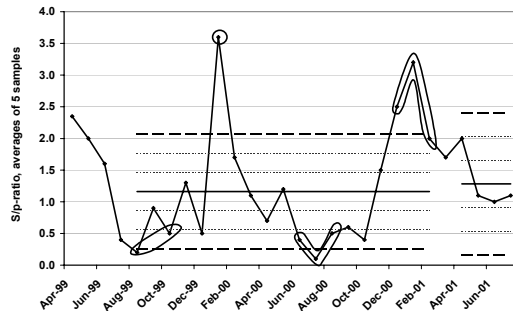
| Group                            | Age/Repro-status           |
|----------------------------------|----------------------------|
| Small replacement gilts          | 11 weeks                   |
| Non vaccinated replacement gilts | 200 days                   |
| Vaccinated replacement gilts     | 230 days                   |
| Inseminated Sows                 | 90 days post insemination  |
| Sows ante partum                 | 110 days post insemination |
| Sows post partum                 | 7 days post partum         |
| Sows before weaning              | 21 days post partum        |
| Cull Sows                        | Any reproduction state     |

To evaluate the serology results data was analyzed using methods for statistical process control (SPC) developed by W.A. Shewhart (2) and more recently described by Wheeler and Chambers (3). S:P-ratios were charted in X-barR charts, production parameters were charted in XmR charts. Signals were identified using decision rules 1 and 2 as described by Wheeler and Chambers.

**Results and Discussion**

In Graph no. 1 the S:P-ratios of the cull sows are charted. For statistical analysis the time from 4 to 7/1999 was not included as this period was considered the time necessary to eliminate the effects of the vaccination that had been ceased in 3/99. The period between 7/99 and 1/2001 was considered one process (only gilts vaccinated). Signals can be seen in 1/00 and 11/00- 3/01 giving evidence of clinical PRRS-infections. Signals of cooling down after stop of vaccination (8-10/99) and PRRS-infections (6-8/00) are

evident. Signals alike could be seen in most of the other



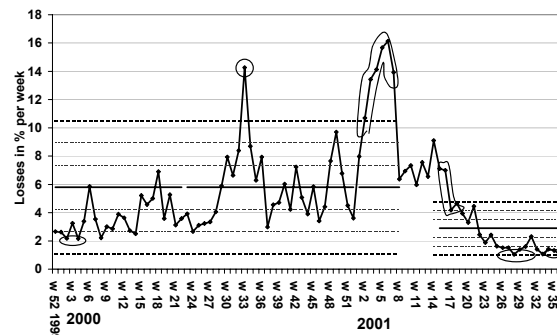
groups as well (data not shown).

Graph 1: PRRS-Serology results of cull sows

Based on the results the herd was clearly unstable and a recommendation to vaccinate the whole herd was given as early as 10/01 but not followed at that time due to cost concerns.

At the beginning of 2001 another PRRS-episode lead to severe respiratory problems in the nursery with increased losses. (Graph 2), furthermore an increase in repeat-service rate and abortions/weak born piglets was seen.

Graph 2: Losses in nursery



Finally in 2/01 it was decided to mass vaccinate the whole herd with Ingelvac PRRS MLV. Beginning February piglets were vaccinated at weaning, mid February vaccination of sows started. At the end of march all animals on the farm (except finishers) had been vaccinated. With progressing stabilisation of the herd losses in the nursery further decreased. The following parameters were significantly improved also: Repeat service rate, Number of live born piglets, Prewriteanig mortality, Number of weaned piglets/litter.

**References**

- G. Schagemann et. A. Wilms-Schulze Kump (1999). Proceedings "PRRS and Aujeszky's Disease". CNEVA-AFSSA and ISPAIA, France. 6-17
- Shewhart; W. A...Statistical Method from the Viewpoint of Quality Control. New York:Dover publications, Inc.; 1939
- Wheeler, D. J., Chambers D.: Understanding Statistical Process Control. 2<sup>nd</sup> ed. Knoxville, Tennessee: SPC Press, 1992