Monitoring status of bacterial contamination on boar stud: a case report

Janaína C. Rocha[1]; Letícia Cantele[1]; Flávia C. Silva[1]; Lucas Bevilaqua[1]; Larissa L. do Carmo[1]; Kérlin Calderan[1]; Pedro Ivo de Quadros [1]; Jorgea Pradieé[1*]
[1]*Bretanha Importação e Exportação LTDA, *Departamento de Pesquisa e Desenvolvimento Bretanha Suínos*
jorgea@bretanhasuínos.com.br

Introduction

Bacterial contamination is one of the most important issues within a swine semen processing center, which must be constantly monitored. Mainly because the quality of the insemination dose is related to individual factors of the males and inherent to the semen technology, such as collection, handling, and storage of the dose, it becomes increasingly necessary **for** production process improvement (1).

Materials and Methods

The case report happened at a multi-genetic boar stud **in** Chapecó, south-west region of Santa Catarina State. However, we will present a case of only one specific genetic (39 animals). There was a routine of once a month **sending of** samples of fresh, extended, and stored semen, besides water (inlet water, osmosis, animal drinking water, stored and extender), to the laboratory to evaluate the contamination status of each sample. The goal for bacterial status for fresh semen is <2000 cfu/mL, for diluted and stored semen < 500 cfu/mL and for water is 0 cfu/mL. Because of this type of monitoring, inlet and stored water samples were detected last June with values higher than the established, but this **did not reflect** on microbiological quality of the dose that month. After that some actions were performed to suppress the contamination **and** procedures were carried out to identify problems. Identifying perforated tank bags, osmosis with low water production capacity (and immediately request for new equipment). Cleaning of the water tanks was carried out, and alignment of processes with the team. Even so, in July **it** was detected **that** 55% of stored semen sample was contaminated. **However,** the samples of water were good. In August, the identification of males with higher contamination and application of antibiotics in the foreskin to reduce local contamination were **included in** the procedure, as well as cleaning of the boar housing and cleaning animals. The doses were normally produced with long term extender (Vitasem, Magapor®), and to reduce the fresh semen contamination an extender during the collection phase **was used** (Dicol, Magapor®). Monitoring first packaging dose, **mainly** because **of** the filling hose quality. After that, in September, plating was carried out at several points in the laboratory, and all collection points showed controlled contamination. October was the end of use Dicol on fresh semen because the contamination was controlled. And in this period we **started to send** more samples that we used for bacteriological control. In August we sent 54, in September 39, in October 34 and November 30 stored semen samples.

Results

Table 1 shows the percentage of samples in compliance based on the established target of 95%. In July **it** was 45%, in August 45,6% and in September 43,6% of stored samples in compliance. Of the 39 animals, 15 showed contamination. After that, with the effectiveness of the actions, the months of September and October have already returned to normality with 100% compliance of the stored samples.

Discussion and Conclusion

In our case, after **cleaning** the boar housing and boars, the contaminantion on fresh semen **was** controled. **It is** effective to monitor the status contamination once a month, but to discover the source of the contamination **it** was necessary to investigate all phases involved in the semen collection system. It is possible to adopt action plans, providing support to design better strategies, adjusting the procedures (2).

So some questions that **remain** here **are**, how important is the bacterial monitoring status of dose? How many times **is it necessary** to proceed monitoring (once a month, every week)? How many samples **should be sent** to the lab, and how to decide?

This case s**howed** us that monitoring every week could be a good strategy. Monitoring the main critical points is extremely important to ensure the quality of the dose. And **doing** this kind of periodic monitoring of samples could save time if you consider that the diagnostic of the problem can be faster and more effective **for** decision making, saving time and money.

Table 1. Number of samples: compliance/total and percent (%) fresh, extended and stored semen

Months	Samples		
	Fresh	Extended	Stored
July	4/5 (80)	5/5 (100)	9/20 (45)
August	4/5 (80)	5/5 (100)	4/54 (44,4)
September	15/20 (75)	6/20 (30)	17/39 (43,6)
October	26/26 (100)	10/10 (100)	34/34 (100)
November	9/11 (82)	5/5 (100)	30/30 (100)

References

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