

Reducing Salmonella contamination rate in pigs

Summary

The experimentation has been carried out based on the use of electrolyzed water in 3 pig farms (breeding, transition and fattening), as sanitizing, disinfectant and drinking water of the animals. Previously, the state of contamination by Salmonella was characterized in the farms. The effect of this water on the control and reduction of salmonella contamination rates in all stages of pig production has been studied, by characterizing the state of the farms, once the study period has been completed.

Objectives

The main objective of the project has been to establish a protocol for the control of Salmonella in all stages of pig production (sows, weaning and fattening), through the use of electrolyzed water as a sanitizer, disinfectant and drinking water. The specific objectives were: to determine the bacteriological prevalence of Salmonella infection in the pig farms of the project, to identify risk factors, to introduce electrolyzed water as a sanitizer, disinfectant and drinking water, and to evaluate its effectiveness in the control of the prevalence of Salmonella.

Description of project activities

The project activities were divided into 2 phases: 1st in sow farms and 2nd in weaning and fattening farms. First, the initial level of Salmonella infection in farms was characterized. In the first phase, the equipment was set-up to apply electrolyzed water in the beverage and sanitization of a breeding farm. At the end of the study period, the Salmonella contamination status was re-characterized between the group of treated water piglets and a control group treated with tap water. Reproductive parameters were also monitored. In the second phase, electrolyzed water equipment was installed successively in weaning and fattening farms. Salmonella and productive prevalence parameters were compared to groups of control piglets treated with tap water.

Final results and practical recommendations

The result of the project has been: electrolyzed water has an important hygienizing effect. In the experimentation with sows, the prevalence of Salmonella has been slightly lower in animals treated with electrolyzed water. The management of the farm with dynamic lots of sows has made it difficult to identify significant improvements. It has been observed that the electrolyzed water guarantees the correct microbiological quality of the water. In the weaning farm, results indicated that Salmonella does not appear to be a problem at this stage. However, slight improvements have been observed in the production parameters of the animals treated with electrolyzed water. In the fattening farm, a significant reduction in the prevalence of Salmonella in blood and feces was obtained after administering electrolyzed water throughout the fattening period. The reduction to 80 kg of fattening was 26% prevalence in blood and 34% in feces. On the other hand, it has been found that feed is no longer a risk factor for Salmonella in pig farms.

Conclusions

The conclusions of the project were: Electrolyzed water has an important hygienizing effect and it is presented as a suitable water purification alternative in pig farms. Currently feed is no longer a risk factor for salmonellosis in pig farms. A slight improvement in productive parameters was observed in piglets, when using electrolyzed water, although not any case presented salmonellosis occurrence. On the contrary, sows show no improvement of reproductive parameters when applying the electrolyzed water. There has been no reduction in the water consumption of the treated animals, so they do not present any problem when drinking tap water with 4% of electrolyzed water. Administering 4% of electrolyzed water during the entire fattening, a significant reduction in the salmonella prevalence of pigs was observed.

Operational Group Leader

Entitat: **GRANJA CLARET, SL**

E-mail de contacte:
arturo@alficgrup.com

Tipologia d'entitat:
Empresa agrària

Operational Group Coordinator

Entitat: **GRANJA CLARET, SL**

E-mail de contacte:
arturo@alficgrup.com

Tipologia d'entitat:
Empresa agrària

Other Operational Group members (beneficiaries of aid)

Other Operational Group members

Entitat: **AGROPECUÀRIA CATALANA, SCCL (AGROCAT)**

E-mail de contacte:
gemma@agrocat.com

Tipologia d'entitat:
Indústria agroalimentària

Entitat: **GRUP DE SANEJAMENT PORCÍ DE GIRONA**

E-mail de contacte:
emc@gspgirona.org

Tipologia d'entitat:
Agrupació o associació de productors agraris

Entitat: **UNIVERSITAT DE GIRONA**

E-mail de contacte:
xavier.puigvert@udg.edu

Tipologia d'entitat:
Universitat

Keyword-category

Animal husbandry and welfare
Pest / disease control

Territorial scope

Province	County
Tarragona	Solsonès
Lleida	
Girona	
Barcelona	

Project dissemination *(publications, seminars, multimedia...)*

Jornades tècniques divulgatives i butlletins d'informació.

Pàgina web del projecte

Other project information

Projecte period

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