



XVIIth World Congress of the International Commission of Agricultural and Biosystems Engineering (CIGR)

Hosted by the Canadian Society for Bioengineering (CSBE/SCGAB)
Québec City, Canada June 13-17, 2010



MANAGEMENT OF RESOURCE, WASTE AND IMPLEMENTATION OF STRATEGIES IN PIG PRODUCTION IN CATALONIA-SPAIN

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CSBE100183 – Presented at Section II: Farm Buildings, Equipment, Structures and Livestock Environment Conference

ABSTRACT The objective of this work was to evaluate the management of resources, waste and application of environmental strategies in the region of Catalonia, Spain. The evaluation was realized through a questionnaire with 200 producers with different production systems. The following items were evaluated; the control of resources (quantity of feed and quantity and quality of water), waste (control the slurry production and pollutants gaseous) and application of slurry management strategies (segregation of rainwater, use of additives in sewage, aeration of slurry and transportation of slurry to a treatment plant. The data obtained was expressed in percentage and presented in graphics for better characterization of the study. All respondents controlled the amount of food; and only 21% controlled the quantity of water and almost all controlled the quality of water. Everyone controlled the production of slurry but no one controlled the production of gaseous pollutants, regardless of mandatory legislation in some cases. In the case of strategies of slurry management: 48% separated rainwater, 7% use additives in the sewage, 4% aerate the slurry and 59% transport the slurry to a treatment plant. Based on the data, it can be seen that the variables related to amount of feed, quantity and water quality are better monitored when compared to environmental variables.

Keywords: Environment impact, Gaseous pollutants, Slurry, Water.

INTRODUCTION One of the most important aspects in swine production is the management of resources, waste and applications of strategies to reduce environment impact, improve economic activity and planning strategies to reduce the problems of resources and waste.

In any other activity, to swine production is also associated with the production of amounts of waste which if not handled in a correct way can pose a risk to the environment (Babot et al., 2004). Therefore, monitoring the amount of feed, quantity and

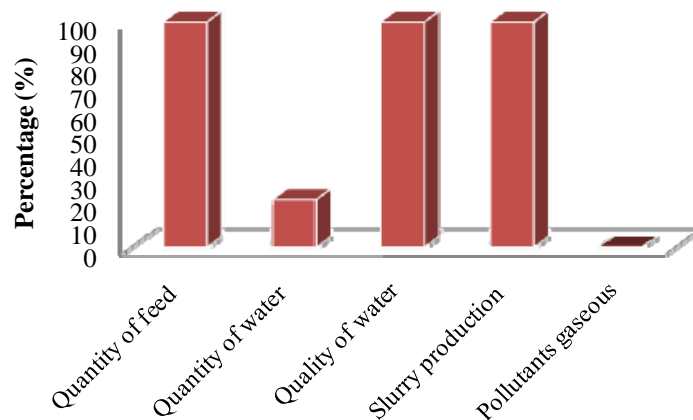
quality of water, slurry production and the pollutants gaseous can be an effective strategy for reducing these problems.

The objective of this work was to evaluate the management of resources, waste and application of environmental strategies in the region of Catalonia, Spain.

MATERIAL AND METHODS The research data were collected from different pig farms located in Catalonia, northwest Spain, in the years 2006 and 2007. For this, the questionnaire was prepared with the objective to know the strategies employed to improve the management of resources and waste at pig farms in the Catalonia-Spain. Two hundred pig farms with different production systems participated of the research. Owners or technical responsible of the farms were interviewed in this study. The questionnaire contained closed questions, with alternatives to choose about the control of resources (quantity of feed and water quantity and quality), waste (control of production of slurry and gaseous pollutants) and application of slurry management strategies (segregation of rainwater, use of additives in sewage, aeration of slurry and transport the slurry to a treatment plant). The informants were coded to ensure anonymity and consent for the interviews was obtained after verbal explanation of the objectives and purposes of the study. The data obtained were expressed into percentage and presented in graphics for better characterization of the study.

RESULTS AND DISCUSSION An important factor in a swine production is whether the resources used (for example, water and food) and wastes generated at swine production (slurry and gas contaminants) are controlled and whether the farms use a strategy to better manage resources and waste.

It can be seen in graphic 1 the responses on the control of resources and waste generated by a swine production. Considering only those who answered this item of questionnaire, all respondents admitted control the amount of feed offered to animals. In relation to the amount of water, only 21% responded evaluate the water usage in production. When asked about the quality of water, all who responded to this question admitted control the quality of water at some time during the production cycle.



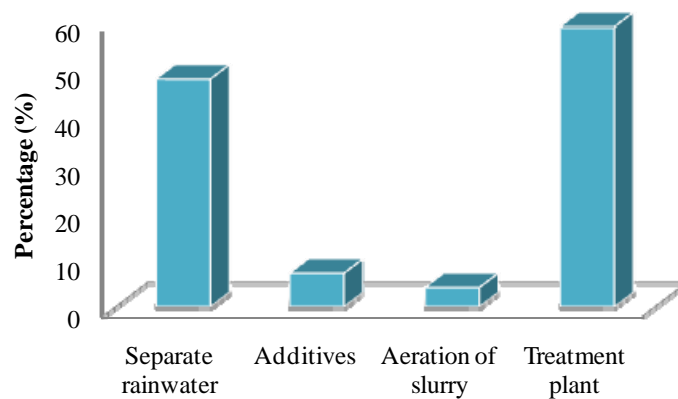
Graphic 1 – Control of resources and waste generated

The control the amount of feed given to animals is a very common practice because food represents a large part of total production cost and the protein is the nutrient most expensive of the diets of pigs (Saraiva et al., 2003).

The same importance is not given water. This is because the water is still considered by many a resource abundant and relatively cheap (Fraser et al., 1990). However, currently there is a large environmental appeal and rational use of this feature, which causes their inappropriate use or waste entails serious environmental problems.

Everyone control the production of slurry (Graphic 1) but no one controls the production of gaseous pollutants. It should be taken into account that the owners of farms in Catalonia has obligation to monitor the production and management of slurry as well as communicate the production of gaseous pollutants generated by swine production. Currently these data can be communicated via the Internet to government agencies.

According to the rules, all the pig farms have to use some strategy to improve production and quality of slurry as well as the bad odors derived from them. The results are shown in Graphic 2.



Graphic 2 – Strategies used in waste management

In the case of strategies of slurry management: 48% separate rainwater, 7% use additives in the sewage, 4% do the aeration of slurry and 59% transport the slurry to a treatment plant (Graphic 2).

CONCLUSION Based on the data, it can be seen that the variables related to amount of feed, quantity and water quality are better monitored when compared to environmental variables.

Acknowledgements. The first author thanks to the University of Lleida, and in particular to Dr. Daniel Babot Gaspa, the opportunity to develop this research.

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