CORE organic II

Antibiotic usage in organic pigs

– Will consumers benefit from restricted antibiotic usage in organic pigs?

SafeOrganic

Title of the project:
Restrictive use of antibiotics in organic animal farming - a potential for safer, high quality products with less antibiotic resistant bacteria.

Introduction

SafeOrganic is expected to document low levels of antibiotic resistant bacteria in organic pigs due to the restricted use of antibiotics and assess if this important quality parameter is jeopardized with the current slaughter routines.

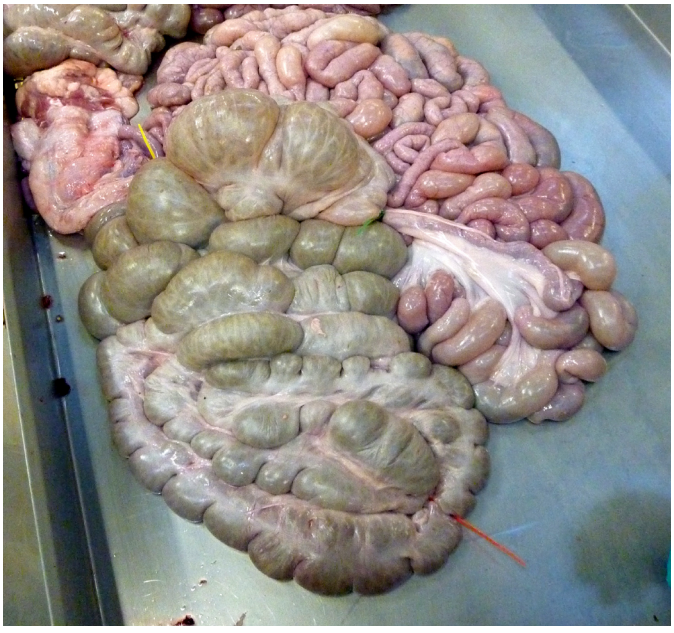
Field surveys will compare antibiotic resistant levels in organic and conventional pigs in DK, SE, FR and IT and possibly improve slaughter procedures and identify markers for antibiotic usage in organic pig production (control option).

Background

Spread of antibiotic resistance (AR) along the food-chain is a major food safety concern due to the risk of treatment failure of human foodborne infections. Can lower AR levels be claimed as a particular quality of organic pork due to the restrictions on antibiotic usage? Or will the current slaughtering of organic and conventional pigs together abolish this quality attribute? Furthermore, lack of registration of antibiotic usage in some EU member states necessitates methods for estimating the consumption (control of imprudent use) of antibiotics in organic herds.

Benefits of the project

The information gained in the present project will be important not only for adding quality attributes to organic meat, but also to learn more about how to counteract the growing and serious problem with antimicrobial resistance in general. This knowledge is crucial for finding good farming practices and sustainable solutions for the future. This will benefit the consumers, the organic pig producers as well as pork meat industry. Further, the project may contribute with knowledge on AR, which can be valuable also for the conventional production. Also, the public food control authorities may be provided a tool for identifying herds with problematic use of antibiotics.



Expected results

The SafeOrganic field-survey is expected to provide documentation of lower resistance levels in organic pork compared to conventionally produced pork. This higher food safety quality of organic pork can then be exploited by organic pork producers/ industry and retailers in marketing.

SafeOrganic is expected to demonstrate that the slaughterhouse is a place for cross-contamination of organic pork with antibiotic resistant bacteria from conventional pigs. Such knowledge will be brought to the attention of the slaughter industry in order to optimise slaughter routines.

Aims to identify a link between characteristic antibiotic resistance/genotype profiles and antibiotic consumption. Such estimates of antibiotic consumption could help control bodies to discover violations of organic legislation and enhance the reliability of certification systems.

Provide documentation that sampling of pigs at the slaughterhouse offers an easy/cost-effective method to determine pathogen status of pigs in the farm of origin.

Expected long-term impacts

Providing scientific input on the mechanisms behind development of antibiotic resistance in general. Contribute to discussions of the qualities of organic pork and the possible improvement thereof.

Target groups
The target groups entail the entire organic pork production chain from farmer to slaughterhouses to retail and finally the consumer. The result will also be relevant for organic control authorities and European Commission decision makers. Additionally, the obtained knowledge will be communicated to the scientific community in general.

Main acitivties

- Field-survey for comparison of the antibiotic resistance levels in organic and conventional pigs.
- Investigating to which level AR bacteria from conventional raised animals is transferred to organic meat when animals are slaughtered at the same processing line.
- Asses-sing if the occurrence of certain bacterial AR patterns/genotypes can serve as markers for antibiotic usage in organic animal production.
- Evaluate the potential bias of sampling at the slaughterhouse as compared to at the herd. Communication of research findings to target groups.

Related projects

The Danish research project QUALYSAFE (2005-2009) investigated quality attributes in conventional and alternative animal farming and results indicated a lower occurrence of AR in organic pigs. This lead to the hypothesis that this property may be common by organic pork production across Europe.

Project dissemination

- National agricultural media
- Int. J. Food Microbiology
- International Conferences (e.g. organic/pork/food microbiology)
- ICROFS News
- J. Food Protection
- Food Control

How to reach the endusers

The Advisory Committee will support contact to networks within organic animal farming and target groups will be kept updated via the project webpage, workshop, publishing of results and presentation at meetings/conferences

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Further information

This project is funded via the ERA-net CORE Organic II by national funds to each partner. CORE Organic II is a collaboration between 21 countries on initiating transnational research projects in the area of organic food and farming. In 2011, CORE Organic II selected this project and 10 more for funding.

Read more about the project at the CORE Organic II website: http://www.coreorganic2.org/SafeOrganic and in Organic Eprints: http://orgprints.org/view/projects/SafeOrganic.html