

Improving the quality of pork and pork products (EU-project)

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Abstract

Quality of pork has become a complex and dynamic theme involving the total pork chain from fork-to-farm with a multitude of interacting aspects related to people's demands as consumers, and the demands of people as citizens and producers for economic and environmental sustainability. The European Unions self-sufficiency and leading position in the global market for pork and pork products is challenged by a number of non-European countries. Therefore, there is a need for developing innovative, integrated, and sustainable food production chains of high quality pork products matching consumer demands. A large EU-project (Q-PorkChains) funded by EU 6th framework programme has been initiated in 2007. The aim of Q-PorkChains is to improve the quality of pork and its products for the consumer and to develop innovative, integrated and sustainable food production chains with low environmental impact. Q-PorkChains is composed of six research modules (consumer and citizen demands, pig production, product development, pork chain management, molecular quality control and knowledge synthesis) and two horizontal modules focusing on implementation of obtained knowledge in pilot and demonstration chains and dissemination to stakeholders at all levels. The project comprises 51 partners from 15 European and 4 non-European countries (China South Africa, Brazil and USA).

Introduction

Quality of pork and pork products is a complex and dynamic area. The European Union's self-sufficiency and leading position in the global market for pork and pork products is challenged by non-European pork-producing countries such as Brazil, China, USA and Canada. Improving pork quality involves optimisation of the complete pork chain covering many factors spanning from farm-to-fork. However, interpretation of the term "high quality pork" may differ markedly between communities within a country and between different countries. Hence, the production of high quality pork has to be centred on the demands of people as consumers and as citizens and of producers for economic and environmental sustainability. Identifying and improving the underlying factors, spanning from fork-to-farm, will contribute to maintaining the leading position of European pork production. Hence, the future challenge is to increase the production of high quality products from pigs produced in sustainable production systems and matching consumer demands. The strategy of Q-PorkChains is to develop and test advanced and multi-disciplinary approaches for identification, characterisation, prediction and control of pork and pork products in different stages of the pork chain in diverse production systems.

The objective of Q-PorkChains is to improve the quality of pork and pork products for the consumer and to develop innovative, integrated and sustainable food production chains of high quality pork products with low environmental impact matching consumer demands.

Q-Porkchains structure

Q-PorkChains is composed of six vertical research modules (I-VI), and two horizontal implementation and dissemination modules (A-B) (Figure 1).

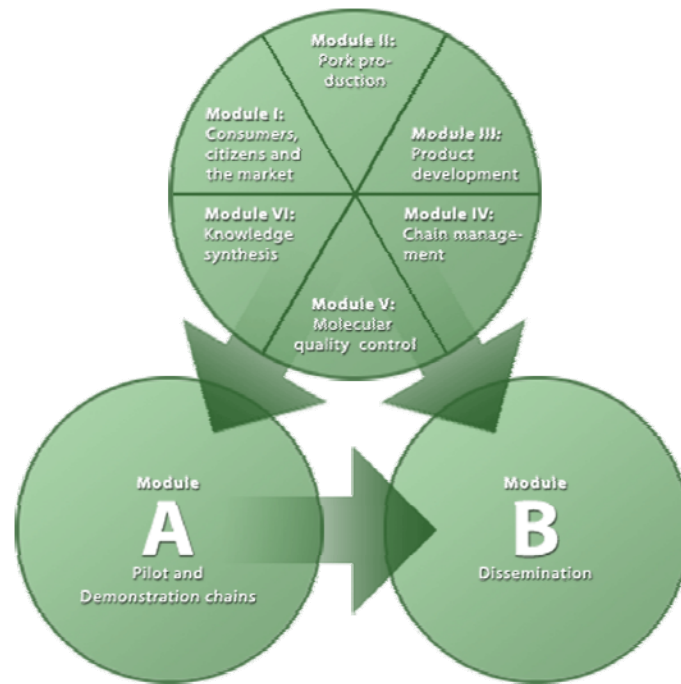


Figure 1. Q-PorkChains research design.

In module I consumer and society demands for production of high quality pork will be assessed and new tools for the development and marketing of pork-based products will be developed. Based on the consumer and society demands established in module I; module II will develop tools for improved responsiveness of sustainable production systems at the farm level, module III will develop innovative technologies for improved pork products with increased nutritional value, eating quality and convenience, module IV will identify and develop tools for integration and efficient sustainable management of a diversified European production and distribution system and module V will develop and apply new and appropriate molecular control tools in the pork production. Module VI will develop prediction models for pork quality, safety and welfare as a consequence of the production system. Two horizontal modules (Module A and B) will function as catalysts enabling the research results from Module I-VI to be exploited and put into action. Module A aims at incorporating new knowledge from research modules into pilot and demonstration activities in cooperation with small and medium sized enterprises (SME's). The pivotal role of pilot chain activities is the testing and implementation of innovative concepts from Q-PorkChains research and development activities (R&D) in specific European pork chains or networks – making the switch from research to business. In Module B news and new knowledge arising from Q-PorkChains will be disseminated to stakeholders at all levels by incorporating new knowledge into different learning objects for higher education as well as training programmes for industry employees. Virtual communities for teachers and trainers as well as Ph.D. students within pig and pork production will be established in order to facilitate knowledge exchange.

Expected Q-PorkChains achievements

Module I

- Clear empirically based guidelines to the other modules for market potential and societal acceptance of production systems, processing technologies, and newly developed consumer products
- A new toolbox system, including computer software for market share prediction and new up-front product development techniques

Module II

- A comprehensive inventory of pork production systems at farm level existing in EU countries and in the most important competing countries assessment of their sustainability, and identification of ways to improve it
- Designs of improved and innovative pork production systems and quality assurance strategies

Module III

- New approaches and innovative technologies to obtain nutritionally enhanced, quality optimized and more convenient pork products

Module IV

- New approaches, system designs and supportive tools for integrated management of pork chains, focusing on quality systems, sustainable chain logistics and management innovations

Module V

- To equip the industry with molecular tools that can be used throughout the pork chain for the production of high added value pork and pork products

Module VI

- Validated models for use on a practical level to give guidelines accessible to the public for obtaining meat products that fulfil specific demands with respect to technological and sensory quality, safety and welfare

Module A

- Pilot research implementation in chains together with SMEs and demonstration implementations
- Europe wide visibility of the new developments deriving from the project

Module B

- Transfer knowledge from Q-PorkChains to target groups at all levels (consumers, industry and universities)

Q-PorkChains partners

Q-PorkChains comprise 51 partners from 19 different countries, including 32 research institutions, 19 business partners and industry associations. Forty six institutions are located within the EU and 5 institutions are located outside EU in China, USA, Brazil and South Africa. All partners can be found on the public homepage.

Conclusions

In conclusion, Q-PorkChains runs from 2007-2011 and will benefit with innovative knowledge on production of pork and pork products from sustainable food production systems with low environmental impact matching consumer demands. Information about the project can be found on www.q-porkchains.org.

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