

# Strategies for a diversified organic pork production – an upcoming project

Anne Grete Kongsted<sup>1</sup>, John E. Hermansen<sup>1</sup>, Chris Claudi-Magnussen<sup>2</sup>, Bent Hindrup Andersen<sup>3</sup> & Helle Frank Jensen<sup>3</sup>

<sup>1</sup>Department of Agroecology, Faculty of Agricultural Sciences, Aarhus University, PO Box 50, 8830 Tjele, Denmark. <sup>2</sup>Department of Pork and Beef Quality, Danish Meat Research Institute, Maglegårdsvej 2, 4000 Roskilde, Denmark. <sup>3</sup>Department of Agricultural Engineering, Faculty of Agricultural Sciences, Aarhus University, Research Centre Bygholm, Schüttesvej 17, 8700 Horsens, Denmark

## Abstract

The objective of this project is to identify strategies for a diversified organic pork production with superior sensory quality based on pigs foraging in the cropping system. Three categories of slaughter pigs (young entire male pigs, female pigs of more than 100 kg and first parity sows) will be investigated and a traditional breed will be compared with a modern crossbred.

## Introduction

Organic food production is the fastest growing segment of the food sector in the world (Raynolds, 2004). In Denmark the consumption of organic pork has increased by 100% from 2003 to 2005 (Danmarks Statistik, 2007). Although growing, the organic pork consumption is, however, still low (<1%) compared to e.g. organic egg and milk consumption with 16% and 26% of the market share, respectively (GfK, 2007), and there is reason to consider why.

The organic pig production of today is typically characterized by 1) compromises with regard to animal welfare issues e.g. environments that restrict the animals possibility of performing natural behaviour, 2) the use of specialised genotypes not necessarily well-suited for outdoor conditions nor of a particular gastronomic quality, 3) little or no objective quality differences compared with conventional products and 4) a heavy price competition with pork products produced in conventional farming. These constraints may be the reason for the current low production and consumption of organic pork and call for new ways of production.

Thus, it is a key challenge to establish the knowledge base for development of new organic pork products which have a high credibility, a high eating quality, and – not least – have a particular appearance in the final presentation for the consumers, hereby making them recognize the products as organic and in consequence be willing to pay a premium price. The establishment of such knowledge is the basic idea of this project. The project is part of a larger multidisciplinary project *Quality and Integrity of Organic Eggs, Chicken meat and Pork*.

The overall objective is to identify appropriate strategies for a diversified organic pork production with superior sensory quality characteristics based on pigs foraging in the cropping system. Specific objectives are to investigate how the performance and meat quality of different “types” of slaughter pigs are affected by genotype. The following three categories of slaughter pigs will be investigated:

- 1) entire male pigs slaughtered before sexual maturity
- 2) female pigs slaughtered at more than 100 kg live weight
- 3) sows slaughtered after weaning of the first litter

Three different breed combinations will be compared:

- 1) the modern crossbred (Landrace×Yorkshire)×Duroc
- 2) the traditional breed Danish Black-Spotted
- 3) the crossbred Danish Black-Spotted×Duroc.

The use of traditional breeds may be a way to produce meat products with superior eating quality (Warriss et al., 1996). At the same time traditional breeds are generally considered more suited for the outdoor production compared to more modern genotypes because of their less sensitiveness to extreme weather situations and good mother abilities (Guy & Edwards, 2002). Unfortunately, the growth performance and the lean contents of traditional breeds are relative low and the costs of production therefore higher. This may, however, be less evident in an organic system based on pigs integrated in the cropping system because traditional breeds are believed to be able to retrieve a larger proportion of their energy need by foraging.

### **Experimental set-up**

The experimental set-up is based on outdoor seasonal production of pigs with farrowings in the spring as “in nature” (Meynhardt, 1990) and no pigs on pasture during winter when the risk of nutrient loss is high (Eriksen et al., 2006). Eighteen gilts farrow in separate huts. Each hut is placed in a cropping system with a sequence of different crop mixtures including Lupine, which have been associated with positive effect regarding boar taint (Hansen & Claudi-Magnussen, 2004). The piglets are weaned at minimum seven weeks of age and grow up litter-wise with access to the cropping system. The first parity sows are slaughtered shortly after weaning in June and the male pigs are slaughtered in July/August. After removal of the male pigs, the female pigs are allotted litter-wise within each breed combination to two treatments (high versus low level of concentrate). The female pigs are slaughtered in December.

Performance assessments will include growth, feed conversion ratio as well as indirect measurements of the forage intake and utilisation. Objective assessments of the meat quality will e.g. include sensory profile (flavour, odour, tenderness) and skatole concentration in back fat.

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