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## STRATEGIC CHALLENGES FOR DANISH PIG FARMERS

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### ABSTRACT

*The presentation will discuss:*

- 1. How Danish pig farmers implement higher standards for food safety, animal health and animal welfare producing at a world market price.*
- 2. How Danish pig farmers handle a new national imbalance on the market for weaners including a open market price fluctuating more than the traditional used price set by national price formula*

### INTRODUCTION

Pork prices have fluctuated dramatically in Denmark and Europe over the past few years. In 1997, pork prices reached the all high at 14.20 DKK per kg due to an increased demand caused by the outbreak of BSE in the U.K. which increased the demand and Classical Swine Fever in the Netherlands, which reduced the supply. In 1998, however, pig prices have dropped to a very low level at 6.20 DKK per kg. International pork markets have been oversupplied due to increasing pig production in several countries combined with a sharp decline in demand in Southeast Asia and Russia due to the economic crises.

### THE DANISH MARKET

These international market imbalances have also had severe consequences for the Danish pig production. The relatively long high price period encouraged farmers to expand especially in farrowing-to-nursery facilities due to an increasing and profitable export of weaners to Germany and strict environmental regulation for hog production. This development has made the Danish pig farmers economically more dependent on the German market and the risk of closed borders e.g. outbreak of diseases. Furthermore the open market prices for weaners in Denmark rose significantly over the traditional used price (a national calculated price formula). However, the market situation in 1998 had the opposite effect where the export of weaners is dramatically decreased and about 25 pct. of the pig farmers have serious financial problems.

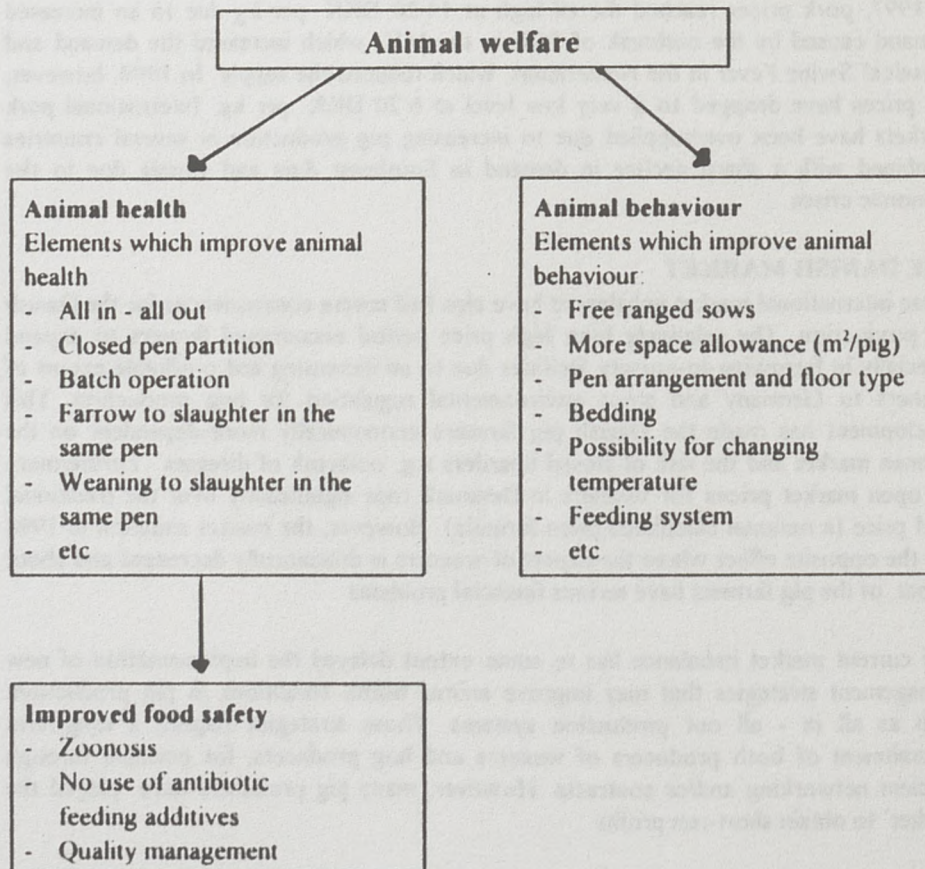
The current market imbalance has to some extent delayed the implementation of new management strategies that may improve animal health conditions in pig production, such as all in - all out production systems. Those strategies require a long-term commitment of both producers of weaners and hog producers, for example through efficient networking and/or contracts. However, many pig producers have 'played the market' to obtain short-run profits.

Nevertheless, consumers are increasingly demanding higher quality food products, focusing especially on food safety and ethical issues such as animal welfare, medication and organic farming. Thus, the Danish pig sector has to take these issues into account in order to maintain or improve its market shares on the domestic market as well as on export markets.

## ANIMAL WELFARE

From a production economic point of view, pig producers have no incentives to improve the behavioural part of animal welfare e.g., increased pen size per pig, straw bedding, (fig 1) unless consumers are willing to pay a premium price over a long period. On the other hand, farmers may have good incentives to improve animal health conditions. Animal health problems increase production costs, which has a negative effect on the competitiveness of Danish pig producers. In order to improve food safety, Danish pig producers have ceased using antibiotic growth promoters in hog production. In addition, they have also implemented a strategy to control and eliminate salmonella problems (Salmonella is problem in about 3-4 % of the Danish herds) Finally, a new regulation requires that new housings systems for gestant sows have to be free ranged

Figure 1 A definition of animal welfare



The following section will summarise results from Nørgaard, 1998, which evaluate all in all out production and indoors free ranged sows as 2 potential options for farmers to improve the animal welfare of the herd

### **ALL IN - ALL OUT**

Batch operation is well known from poultry production and is now developing in pig production as well. Batch operation usually has a reducing influence on most diseases. Better health often affects the pigs' production capability and in addition reduces the veterinary costs.

The practical organising of batch operation takes a starting point in the farrowing units, which if possible should be housed sectioned. As a minimum the pigs should be moved to cleaned sections at weaning. After weaning the weaner- and the porker section is filled and emptied after the all in - all out principle. This inflexible system puts high demands on the management skills to lower the variation of farrowing rate, size of litter, weaning weight etc. in order to maintain a high efficiency of the system. The most effective form of batch operation is multi-site, where every batch is a separate building.

The economic consequence of an all in - all out production is difficult to estimate and must therefore be determined individually, but the average costs are estimated to be around 0-30 DKK per porker, which should be compensated through increased production efficiency. In most cases the variation in the production efficiency due to the individual animal growing ability reduces the pen utilisation and increases the number of delivered underweight pigs. Establishing a multisite or sectioned housing system increases the price per pen unit. However, a downward tendency in the investment with increasing section size is found. For existing porker units with continuous production that changes the production to all in - all out with a few batches a year, this strategy will change the cash flow and increase the price risk.

The analysis shows that the economy of all in - all out production or multisite can be optimised by designing the size of the production system for porkers to about 85 percent of the expected production of weaners or piglets. This will secure an optimal pen utilisation and minimise the variation in weight of pigs inserted. Extra pigs are sold or produced in a more flexible continuous housing system.

### **MULTI-SITE**

When comparing the three sites divided into piglets-, weaners-, and porkers production the economic results show earnings of 270 DKK per hour for pig production, about 200 DKK per hour for piglets and about 140 DKK per hour for the sows. The internal rate of return of the investments will be about 12 percent in the sowherd and about 2 percent points higher for piglets and porkers. The capital input for establishing a full time job (1,665 hours a year) is about twice as high in the weaner production than in the piglet production, while it is nearly three times as large in the pork production. Similar the demand for land for manure disposal per full time worker is much higher for pork and weaner production than for piglet's production, roughly 3 and 8 times higher. This implication can have large impact on which of three types of sites that are chosen.

Advise on which of the three sites in the multisite chain to choose is difficult, but it should primarily depend on the interest and ability of the farm manager or the investors and the opportunities of the farm i.e. access to land and capital. A farmer with more employees and a good earning potential within the limit of national environmental regulations (max 250 DE<sup>1)</sup>) would probably choose the sow operation. A farmer with a goal of less workload and with enough land and capital should choose, piglets or porkers, which gives high pay back and wage ability. The keeper of the sow herd is more vulnerable to price fluctuations, because the market for 7 kilograms pigs is rather limited.

In the long run one should expect that the profitability would be similar in the three sites of the multisite system. In the short run, restrictions of access to capital, land and labour will lead to differences in profitability between the three sites.

From a risk point of view the piglets production is more vulnerable to price fluctuations. Furthermore the market for 7 kilograms piglets is still very small in Denmark. Farmers with weaner production therefore are very dependent of contracts or an efficient market for buying piglets and selling weaners.

No matter which part of the chain is chosen the risk will be reduced, if the whole production is integrated possibly in a network co-operation. However it is vital, that contracts have a long time horizon, that states the production size, price, qualities, and possibly profit sharing are prepared.

### **LOOSE SOWS**

The new regulation regarding indoor housing systems for pregnant sows and gilts (1999) has increased the use of loose housing systems. Furthermore the premium price for UK-pigs<sup>2</sup> has increased the interest for loose housing systems in gestation sections and in mating sections. The analyses of loose housing systems for sows shows that excess costs for straw (system dependent), work (45 minutes per year sow), and extra room for sows (5-10 percent) will mostly be compensated by lower investment per pen. Furthermore, calculations show that the degree of compensation depends on the type of the loose housing systems and grows with increasing herd size. Loose housing systems with sows in big stable - or dynamic groups are cheaper than loose housing systems with sows in smaller groups.

The production costs expected in loose housing systems are similar to costs found in systems using traditional housing units. Calculation shows that additional cost varies between 0 to 126 DKK per year sow (equivalent to a maximum of 0.08 DKK per kilo porkmeat), depending on the economy of size and the chosen production system. It has to be expected that the new regulation will increase the use of loose housing systems leading to increase in production efficiency and - security as well as reduced production costs.

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<sup>1)</sup> DE: Animal unit which equals 3 sow or 30 porkers.

<sup>2)</sup> UK-pigs is a special brand with higher welfare standards

It is possible in the short term to achieve an additional payment of 0.2-0.3 DKK per kilo on pigs from loose housing systems, which meet the UK-demands.

During the change from traditional housing system to loose housing system a lower productivity corresponding to 0.5-1 pig per year sow and a higher replacement percentage on 5-10 percent point should be expected.

#### **DISCUSSION**

Animal welfare, environmental as well as the economic performance is highly depended on the skill of the farm manager, which is often more important than the production system. An efficient farm manager can often generate a better welfare in a "old" production system than a poor farm manager in a system with a big animal welfare potential.

In the future Danish pork production, animal health and animal welfare will become more important parameters. Therefore, production systems have to be chosen with emphasis on animal health and animal welfare conditions. This report shows that such a future strategy to a great extent will be possible without a big rise in the production costs.

The strategy for Danish pig producers is to sell high quality pork with high food safety standards to a world market price. Furthermore to be able to differentiate the production in order to satisfy demands for special brands regarding animal welfare.

#### **REFERENCE**

Nørgaard, N.H. 1998: New Animal Health Improving Housing Systems for Pig, Report no. 98 Danish Institute of Agricultural and Fisheries Economics, Denmark (In Danish).

#### **BIOGRAPHICAL SKETCH**

Nicolaj Henrik Nørgaard, Msc, Ph.d student, born in 1968. Master of Science from the Royal Veterinary and Agricultural University, Copenhagen, Denmark specialised in agricultural economics, February 1994. Employ at the Institute of Agricultural Economics as a researcher in February 1993 and got a six-month leave of absence to stay at Lincoln University, New Zealand and study the consequence of the liberalisation. Currently I am doing a Ph.d. study in animal health economics and animal welfare.

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