STRATEGIES OF THE DANISH MEAT INDUSTRY AND THEIR RELATION TO FUTURE RESEARCH AND DEVELOPMENT

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Introduction

Firstly I shall mention that this paper mainly deals with the pig-meat sector as it is the most important meat sector in Denmark as far as production and export are concerned.

Denmark is probably the only country in the World with twice as many pigs as human beings. We are about 5 mill. inhabitants in Denmark and we have a pig herd of approx. 9,4 mill. pigs. The size of the cattle herd is approx. 2,2 mill. head.

The pigs are produced on 34.000 family owned farms and the cattle on approx. 38.000 also family owned farms with mainly mixed production of milk and meat.

In Denmark we are slaughtering around 16 mill. pigs corresponding to 1,2 mill. tons of meat and 0,8 mill. cattle corresponding to 0,2 mill. tons of meat.

Despite the fact that the danish pig meat production only accounts for 2% of the World's production, Denmark plays a leading role in the international trade as we are exporting 80% of the production and account for 20% of the world trade. Our beef sector is exporting about 75% of the total production but as you will understand from the production figures Denmark does not play a major role in World beef trade.

The Pigmeat Industry

From now on I shall concentrate on the pig meat sector as this part of the total meat sector obviously is by far the most important as far as production, export and economy are concerned. In fact exports of pig meat products amounts to 9% of the total danish export -including all industrial commodities. If we consider pig meat products as one item we are talking of the most important Danish export product.

I should like, rather briefly, to introduce you to this - from our point of view - very important industry. Roughly spoken it consists of five elements, namely the pig producers, the slaughterhouse companies, some specialized processing and other similar companies, the markets as the fourth element, and finally the Danish Bacon & Meat Council which is the general trade organization of the industry, and which I represent in the capacity of managing director.

I do not intend to go into details with each of these five elements. However, I would like to emphasize the very close relations which exist amongst the various parts of the industry.

Almost the whole industry is based on the co-operative principle. This means that the 34.000 Danish pig producers own and run the slaughterhouse companies and the producers also own a further wide range of interests, including the majority of meat canning factories, cold stores and other associated companies.

All the slaughterhouse companies - as well as meat canners etc.- are members of the Danish Bacon & Meat Council. This organization represents the overall interests of the danish producers, covering such areas as research and development, training, veterinary services and representation with official government departments and international bodies, generic promotion etc.

Previously I mentioned that the Danish slaughterhouse industry is completely dominated by the co-operative movement. Only one slaughterhouse company - responsible of about eight per cent of the total production - is a limited company.

Being a member of a co-operative company means that the producer has an obligation to deliver his entire production to the slaughterhouse, of which he is a member. The slaughterhouse, on the other hand, has an obligation to slaughter, process and market pigs of the members as efficiently as possible, in order to bring back as much money as possible to the producers.

25 years ago we had about 77 rather small local slaughterhouses in Denmark, but during these 25 years we have passed through a series of amalgamations, and today we are down to only nine slaughterhouse companies with about 30 plants in total. So today slaughterhouses and processing plants in Denmark are modern and highly efficient units which operates hygienicly, not only at EEC-level, but meet the requirement of the US standards. A long series of operations have been completely automized and data-processing techniques - and even robots are frequently used at most of the plants.

Research and Development

Finally in this part of my lecture I shall emphasize that it should be obvious from what i have mentioned that there is a very close relation between the Danish Meat Research Institute, the pig producers and slaughtering and processing industry. The Danish Meat Research institute is owned by the Danish Bacon & Meat Council. The Institute has - however- its own board but this board refers to the board of Danish Bacon & Meat Council where final definition, coordination and confirmation of working plans takes place.

This means on the other hand that research and development relevant for the long and short term strategies of the pig meat sector are the main tasks of the Danish Meat Research Institute.

The Danish Meat Research Institute works for and is part of a sector the main aim of which is to optimise pig production, slaughtering, processing and marketing of meat products in the form of a wide range of tailermade fresh/frozen cuts and processed products to world markets. As mentioned we export 80% of the production so adaptation to customer needs and demands on export markets is essential.

Therefore the main purpose of the Danish Meat Research Institute is - by research, development, transfer of technology and advisory service - to contribute to further the competitivity in all links of the Danish pig meat chain and by this to maintain a satisfactory economic basis for pig production in Denmark. Therefore it is essential that the Institute devotes the main part of it's ressources to research, the results of which can by put into practice to the benefit of the pig producer, the slaughtering plant or the meat processing industry.

Market Strategies

The research strategies of the Meat Research Institute are therefore derived from the sector's strategies on markets and products and as 80% of the pig meat production is exported, export markets are of highest interest in this respect.

The following figures shows an estimate of our main export market shares of total export in 1995. For the sake of comparison the actual figures are shown as well:

	Export % of tonnage 1988	1995
UK	28,3	26
Germany	11,3	19
France	10,0	12
Italy	8,3	10
Other EEC-count.	1,9	6
Total EEC	59,8	73
USA	12,6	11
Japan	15,8	9
Other non-EEC countries	11,0	7
Total non-EEC countries	39,4	27
Total export	100,0	100

As you will see we expect that a greater share of our export in the future will go to EEC-markets. However, if production increases this does not mean that actual quantities exported to non-EEC countries will go down.

Our main reasons for the mentioned development is the creation of the single european market which we think will have a dynamic and self-perpetuating effect on the processing industry and meat trade in Europe. you will see

- Fewer but bigger food organizations
- Higher degree of market transparency
- Changes of the traditional channels of distribution
- Concentration of economic resources for development and research.
- Internationalization of companies.

At the same time we think that markets overseas to som extent will be supplied from more close suppliers which are now developing their pig industry.

But why do we - here in Denmark- think that we shall be able to gain market shares in Europe at the expense of other pig producing countries? Firstly we think that pig production in some EEC-countries will be reduced or limited due to either bad structure in the primary sector or to pollution problems. And secondly we believe that the Danish meat industry has some strenghts which will make us more competitive than perhaps some other i.e.

- Technical know-how
- Large organizations
- vertically integrated production structure
- Export experience
- Knowledge of the EEC-market
- Good image (quality, uniformity).

We have also tried to estimate the product composition of danish exports in the 90's.

	%	
	80's	90's
Pure raw material	30	10
Semi-processed raw material	45	55
Processed products-bulk sized	15	20
Branded products	10	15

With pure raw material we mean bone-in fresh/frozen cuts with fat and rind. Semi-processed raw material are the tailormade deboned cuts without fat and rind we supply to different industrial customers in many countries according to individual wishes. No further cutting or trimming is necessary before use for processing at the customer.

The bulk sized processed products are f.ex. the big (up till about 10 kg) cooked hams and shoulders in cans or cryovac which we ship f.ex. to the USA.

Branded products are processed retailpacked meat products.

As it appears from the figures our export of tailormade semi-processed cuts is expected to get an increasing share of our total export at the expense of pure raw material. Increases are also expected for bulk size processed products and branded retail packed products but these groups will still constitute a relatively small share of our total export.

Research Strategies

With the stated trends in mind and in acknowledgement of the fact that one of our strengths is our ability to supply uniform cuts to meat processors it is obvious that the pig meat sector's main activities on marketing and research will be concentrated on the growth areas.

A very essential condition for improving our competitive capacity is the ability to produce and market well defined products with uniformity in size and quality. Uniformity is a very essential quality parameter. However, quality products must also be produced at fair costs.

Some elements of the strategy for future research and development for the danish meat industry - based on the mentioned estimates, assumptions and expectations to future markets and product composition in export - will be mentioned in the following.

Among the conditions for producing uniform qualities is the ability to influence and control the most essential quality aspects both in the production of raw material and in processing. This can be done both by payment to the farmer according to the value of the raw material and by selection and optimal raw material utilisation in the production. However, it is a condition for doing so that objective methods for grading and determination of meat quality parameters are developed and implemented.

Therefore such on-line grading and meat quality measuring methods have very high priority as far as research and development in the meat sector in Denmark is concerned. By using objective measurement methods in grading and selection you will get well defined uniform raw material and thereby secure optimal utilisation. This is in short one of the main aims for our future research and development.

Other tasks for future research and development if the aims of our strategi shall be obtained are

- To minimize raw material costs in primary production. This can be done by increased productivity in pig production obtained by establishing effective breeding programmes designed to produce animals which balance the requirements of the markets and which will provide minimum costs in pig production.

- To minimize health problems, very intense hygienic control methods in the primary production and on slaughtering and processing lines must be developed f.ex. to detect patogenes before they become a health problem.

- To improve keepability and freshness. This means that still better control programme with suitable methods must be developed.

- Methods to prove that the products are "clean" i.e. free from residues of midicin, growth promoters, pesticides, mycotoxines etc.

- Development of new products and processes, new conservation and packaging techniques.

Other essential and relevant aims could be stated but the ones mentioned we think are the most urgent if our strategi on markets and products are to be fulfilled in an environment of more critical and conscious industrial buyers and consumers.

Examples

I shall now present to you a couple of examples of our newest technology developed by the Danish Meat Research Institute. These are chosen because they clearly demonstrate the impact of goal oriented research and development work.

The first example is our classification centre which is to be installed at all Danish slaughterhouses during this year. This centre, which is used to grade the pigs, is a completely automatic device, which after the weighing of the carcass automatically measures the content of lean meat - not only in the entire carcass, but also in the individual cuts of the carcass by inserting 17 probes in the carcass.

This is of course a very important improvement in relation to the situation today where we only measure the lean meat content in the whole carcass as an average using 1 probe in 3 measuring points. With the new classification centre you can optimise selection of the different cuts in accordance with demands from different markets or purposes.

On the other hand the information you get from the classification centre on each individual pig can be communicated back to breeders and other suppliers. By this the individual pig producer will be able to correct and improve on points where he perhaps could do better.

Another example of relevant research is the development of equipment for the detection of entire male pigs with boar taint. It is wellknown to this audience that boar taint is not acceptable for the consumers and this is the reason for castration of all male pigs.

A couple of prototypes of the new equipment have been installed at some slaughterhouses. Back fat samples are analysed for determination of the content of skatol which is the indicater for the undisireable taste. 0,20 ppm is a acceptable content but the latest trial seems to prove that the limit could be increased to 0,25 ppm skatol.

The reason for the development of this equipment - which we hope will come into practical use on all slaughter lines in a short time - is the very attractive economic advantages which are given to the pig producers if castration is stopped.

Calculations show that if male pigs are not castrated you will-in average - obtain 2% more lean meat in the carcass and get a better feed conversion rate (0,16 feed units less pr. kg.) which, at the same time, reduce manure problems. Furthermore the farmer will save money in desease treatment as the desease frequency decreases. And the ethical aspect must not be forgotten.

We have calculated total savings by not castrating male pigs in Denmark to about 300 mill. dkr per year.

Conclusion

Finally, ladies and gentlemen, I would like to express the hope that you have got the right impression, that due to the narrow links to the meat industry the research and development work done by the Danish Meat Research Institute is relevant to and governed by the meat industry itself. Therefore all efforts done by the Institute is to the benefit of the meat industry and the working programme and budget of the Institute has a very high priority among the many and versatile activities taken care of by the Danish Bacon and Meat Council.