

**Quality Assurance Programs in Beef Production:
A Study Tour of Denmark, Holland and the United Kingdom**

by
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Overview and Context

In May 1999 a group from Iowa State University and the Iowa livestock industry traveled to Europe to observe applied quality systems in agriculture and food production in Denmark, Holland, and the United Kingdom. The group included agriculture economists, veterinarians, livestock specialists, an extension manufacturing specialist, and beef and pork producers. The trip emphasized pork and beef production, and systems were observed comprehensively from farm to consumer.

The trip was organized because today's U.S. producers, processors and purveyors of basic and processed food products face a siege of global competition. This competition threatens both U.S. export markets and domestic markets. Just 10 years ago the United States was the dominant supplier of reliable food (commodities more than value-added products) to the world. Resource productivity, infrastructure for transportation, and technology were so highly developed in the United States that major producing states such as Iowa could compete with some impunity.

Comparative advantage is dynamic in a global environment. Globalization has removed boundaries to capital flow and technology transfer. In this environment, resource-rich countries that have lagged behind in global marketing will move quickly to earn market share. The key will be true customer orientation. Today it is simply assumed that one is a reliable supplier. The nuance is in the other value factors that can be brought to the market; and these factors must be supported by systematic management focused on customer-defined issues.

Iowa, with its relatively small population and massive productive output, is a major exporting state. Iowa has been late in realizing that commodity production will not support economic growth. Thus, value-added is a major theme in revitalizing the ag economy. Iowa's Governor Vilsack has taken up a banner to promote Iowa as the "Food Capital of the World." To support such initiatives it is imperative to know what the competitive marketplace is doing and what the current standards are to compete effectively.

In late 1998, interest began to grow in the management of supply chains to support quality production and the marketing of quality. ISU Extension began exploring the use of ISO 9000 as a platform for such a system. ISU Extension also was becoming increasingly involved with supply

chains and value-added companies in Iowa, both existing and startup. The trend was clear, and accelerating toward managing and marketing quality.

This trend appears to be driven more by the market than regulations. However, there are few models that have successfully achieved this goal in U.S. agriculture, and fewer still in Iowa.

U.S. manufacturing companies are heavily invested in quality management systems based on ISO 9000 principles or similar methods that sometimes exceed ISO. The trend in manufacturing appears to have started with large companies, particularly in the auto industry. Fierce foreign competition within the domestic U.S. marketplace forced this response, which has resulted in extraordinary improvements in competitiveness and productivity.

Driving Forces

As for U.S. agriculture, the trend toward quality management is only beginning. The driving force appears to be smaller entities, with growing interest at the commodity production level. This is a key difference from the auto industry. In automobile production, the quality movement has always been top down. In agriculture, the small producers have to move the larger companies to adopt quality standards.

The major impetus is the need for better margins. Focusing on quality management has consistently meant better cost control and greatly enhanced customer relationships. The supply chain model tightens the link between producer and customer. The global standard is constantly rising in terms of what is "just expected."

A secondary driving force that is emerging is market access. To supply hogs, cattle or other commodities to processors, producers will conform to specifications such as time, date, condition, product requirements, and much more. These specifications flow backward in a linear progression from the processors' customers and the retailers' customers. In a world that demands perfect order from suppliers, there is no room for excuses.

Product liability is another catalyst. Food safety scares are flaring up more frequently in the U.S. Processors and retailers likely will force risk down the line by demanding a standards-based quality assurance system. Enlightened producers understand this and are looking to build rational systems.

The final factor may be regulatory demands that have emerged or will emerge because the public perceives the market to be slow in correcting quality issues. Those issues, which can reach deeply into the areas of environment and animal welfare, are often emotional or subjective, but are seldom based on science.

In 1998 several ISU staff members observed that European agriculture systems were operating with various quality control systems. These systems were aimed at capturing market share by increasing value for the customer. It appeared the European Union could be extending the standards and raising the bar for U.S. producers. These casual observations led to further research and the need for a trip to study these systems. The goals were to determine:

1. What is driving the changes?
2. What is working?
3. What is real versus what is rhetoric?
4. What mistakes can be avoided?
5. How robust are the forces driving the trend?

European Environment

The conditions that lead to drastic change are important to understanding the change itself. In the EU there are three conditions that seem relevant to this report:

1. The political trend in Europe is decidedly to the left, resulting in emphasis on environment, animal welfare, and government regulation.
2. Food safety scares (BSE, dioxin in Belgian pork, and tainted soft drinks) have heightened consumer pressure for regulation.
3. Major retailers, especially in the United Kingdom, are merchandising food products with labels touting traceability, organic/natural, animal welfare, and food safety issues. These are marketing decisions to improve market share and regain consumer confidence in products such as beef.

Factors that overlay the trends described above also are significant. The European Union is capable of overproducing most commodity products in many of its countries. Though the demand is limited by the ability to pay in the global market, supply generally seems unlimited except by producer margins. However, the transition to a single European economy has resulted in subsidies that support both the supply and the farmer who produced it. In short, economic signals are skewed and production is moving at a pace that is currently uncalled for by the market.

Production has reached its maximum capacity. In European countries such as Holland, home to traditionally low-cost producers, environmental regulation intended to improve or at least maintain air and water quality is strangling production. Individual producers and processors find business growth to be very difficult if at all feasible. Throughout the European Union, production quotas limit individual business growth by restricting farms to certain output allotments. There is a desire for the farm units to have a certain physical appearance as well. These old cultures deal directly with the *perceived* problems, whether they are concerned with the environment, animal handling, or family farming. The regulatory approach is on an upward trend in the European Union, whereas the U.S. system is decidedly more *laissez-faire*.

Although the use of sound science is not a foreign concept in Europe, the approach to issues such as food safety is quite different from that in the United States. Europeans expect producers and processors to “prove that it is safe.” U.S. consumers expect producers and processors to “prove there is a problem.” The evolving European skepticism for science and government has led to a market-driven solution for proving issues such as food safety. That solution is controlled, documented, audited supply chains. These systems often are controlled by ISO 9000 or similar concepts. European Union standards are further applied to handle issues such as “auditing the audit.”

Denmark

Cultural and Historical Context

- Denmark covers a land area of only 43,000 square km (similar to a small US state)
- Population is about 5 million
- Most Danes still identify with agriculture and think of theirs as an agricultural society
- High environmental consciousness among general population
- Much media attention to environmental concerns
- Homogenous cultures make it easier to reach a consensus
- Very cooperative and consensus-building decision-making processes
- High amount of citizen trust in government

Agricultural Context

- Average farm is about 40 hectares (about 100 acres) and increasing annually
- Number of total farms is decreasing, from 120,000 in 1973 to 60,000 in 1998
- About 8 percent of Danes work in agriculture; about 4 percent work on farms
- Almost all agricultural sectors are organized as farmers' unions and cooperatives
- Farmers own and control their agricultural advisory services
- Farmers have a great amount of input into national agricultural policies, although they have less input into EU agricultural policies, which are beginning to take precedence
- Long history of socialist policies and subsidies to farms
- Multi-national agri-business doesn't have much power (due to high taxes and strong farmer co-ops)
- Traditionally focused on producing high-quality products because they can't beat other countries in cost of production
- Export two-thirds of agricultural products
- Farmers receive subsidies for conversion to organic and continued-organic production--both from the EU and the Danish government.
- Marketing tests and product development receive a 40-percent subsidy from the state

Marketplace Context

- About one-third of the grocery stores are owned by a consumer cooperative, one-third are owned by one large company, and one-third are owned by small companies
- Processing and distribution in most food sectors is mainly controlled by cooperatives
- Sales from farmers, markets, and on-farm sales are fairly small.

Beef Report

The beef sector in Denmark is much smaller than the pork sector and is predominately a byproduct of the dairy industry. There appeared to be three categories of food production in Denmark: 1) typical agricultural production, 2) certified organic production, and 3) pilot projects into ISO or ISO-like production systems. The government is encouraging a movement to organic production by promoting consumption of organic foods, buying organic foods for institutions, and teaching about organic food in schools. The Danish government is heavily involved in on-farm inspections of all farms. The organic certification requires that specific pre-determined guidelines be met by the producer, but requires minimal documentation.

Kvamilla is a pilot project administered through the Danish extension service to help individual producers develop and implement ISO 9000 or ISO 14000 systems on the farm. In this project, resources were dedicated to developing an umbrella ISO document for production agriculture as well as an individual ISO plan specific to each farm. Extension advisers assisted farmers in developing their individual plans. The project also paid for the initial certification process and the first year of the certification for individuals. More than 60 farms began the process, 53 farms were ISO certified, and 26 have continued the ISO certification into the second year, at their own expense.

Two dairy farms in the Kvamilla project were visited. Both were successful and are continuing with the ISO certification. One farm, owned by the Danish Nature Conservatory, operated as a demonstration farm for organic production practices and hosts more than 10,000 visitors a year. Its staff consisted of 3 full-time farm employees. The manager reported that ISO improved communication among the staff, assisted in training new staff, and helped to document and explain their practices to visiting farmers interested in converting to organic production. The cost of their farm insurance was lowered by the ISO certification.

The second farm was a 160-acre, 70-cow family dairy operated by a husband and wife. They were building a new milking parlor and loafing shed to move out of a stanchion barn. The farmhouse was built in 1873 and they hung the framed ISO 14000 certificates on the dining room wall. Although they did have a computer, there was nothing sophisticated about the operation. The couple reported that ISO certification forced them to pay closer attention to detail and to implement management plans and corrective actions. The ISO project benefited the farm directly by lowering the cost of insurance. It also reduced inspections; one inspector accepted their ISO documentation in place of actual physical inspection. The couple took pride in being early adopters and will pay for recertification and continue with ISO. They wanted to have a Kvamilla label, but commented that there are too many labels in Denmark, and consumers are confused.

We also visited a retail grocer (SuperBrugsen) in Copenhagen, which carried organic meat and had been part of a pilot project to provide extensive product information to the consumer. In the pilot project, consumers could scan a bar code on the package of meat and view a picture of the producer as well as vital statistics about the animal and how it was raised. It is possible to buy eggs with a picture of the producer on the carton. In visits with meat counter managers of the SuperBrugsen store, we were told that consumers were not especially interested in using the bar code scanner on a consistent basis. The managers indicated there was early consumer curiosity, but it did not persist. The pilot had ended and the results of the research have not been finalized.

What is driving the changes: Denmark is an exporter of many agricultural commodities and the government is seeking to differentiate Danish products in the global market. Danish consumers are relatively well off financially, conscious of the environment, and interested in how food is produced.

What is working: It appears that the organic certification and market promotion has been successful. Efforts to initiate ISO and ISO-like programs were successful because it was possible

to establish an ISO umbrella to reduce the certification cost and streamline the development and planning process. However, it is unclear if consumers will differentiate between Kvamilla and organically produced foods.

What is real vs. what is rhetoric: The process of developing an ISO plan encouraged producers to focus their management energies on a tool that will continue to help them. ISO plans also focus on management decision-making rather than regulation.

What mistakes can be avoided: The plans may have been too complicated for the individual operations. It is important to make the ISO plans practical to use, based on best management practices, and easy to maintain and update. There may be a way to have an umbrella certification as well as umbrella development to keep the process affordable.

How robust are the forces driving the trend: It is unclear how much information the consumers want on each purchase, as opposed to simply having the information available if they have questions. It also may be possible to certify the production process to specific minimum standards, rather than individualized farms.

Netherlands

Context

- Slightly less than twice the size of New Jersey
- 15.7 million people
- Has the highest population density in the world
- Environmental concerns severely affect livestock production. Manure mandates are prescribed; frequently the manure has to be shipped to other areas such as Italy, because of the nitrogen and phosphorus regulations
- Netherlands ranks third worldwide in the value of agricultural exports, behind the United States and France
- The agricultural labor force is only 2 percent of the total labor force, but provides large surpluses for export and the domestic food-providing industry
- The Netherlands is a large producer of veal, of which approximately 90 percent is exported to other EU countries; Italy is the primary import destination. Out of the total 2.4 million cattle slaughtered, 114 million (or 58 percent) were veal calves
- BSE has been found in the Netherlands (only 6 cases since 1994)
- The swine industry had an outbreak of classical swine fever in 1997
- Albert Heijn, the largest supermarket chain in the Netherlands (650 outlets), is introducing organic foods, with more than 1 000 organic products coming on line

Beef Report

Much like Denmark, the beef sector in Holland is relatively small, compared to the pork and dairy sectors. The Dutch Product Board (similar to the former National Livestock and Meat Board in the United States) developed a single quality assurance system that they claim is the best in the world, based on internal research. IKB is the Dutch Chain Quality Assurance program that relies

on third-party external auditors and includes feed suppliers, producers, transporters, processors, and retailers. The Product Board developed the system and set the criteria for certification. Holland depends heavily on exports and is trying to differentiate their products in the EU and world markets.

While more than 65 percent of the Dutch hogs are produced on certified farms, only 15 percent of the cattle are in the IKB system. Mandatory regulations ban implants or other growth promotants for all cattle. Government inspectors can make unannounced visits to farms to collect urine samples to test for illegal drugs. There are also very stiff environmental controls on manure storage and application.

The beef team visited a cattle packer (Kroot Brothers) and cattle feeding farm (Henk Brothers). The packer processed both IKB and non-certified cattle but kept them segregated and labeled in the plant. It appeared that they could trace the retail product to a processing time period within the plant and from the carcass to the farm, but not from the retail cut to the individual animal. A vertically integrated veal processing plant that was ISO 9000-certified, as well as IKB-certified also was visited. The veal plant, with its ISO program, could trace individual cuts to the animal using bar codes on the carcasses, primals, and packages.

The beef farm was feeding bulls, with EU identification tags, that were purchased from France and other neighboring countries. The animals had to be accompanied by a paper “passport” each time they move from farm to farm or to the slaughterhouse. Copies are made for the buyer, seller, trucker, and EU agriculture minister in Brussels. All treatments are recorded on the passport.

What is driving the changes: Exporting products to demanding EU consumers in an era of food scares and distrust of government appears to be driving the program. The recent dioxin scare in neighboring countries should test their system of trace back and the ability to calm consumer fears.

What is working: The third party audit has value, given the drivers of change. A single set of standards is easier to explain and monitor, compared to individual ISO plans. The IKB system was developed by the industry, rather than by consumers, packers, retailers, or government.

What is real vs. what is rhetoric: If the critical production and processing points are checked and monitored, the Dutch IKB system is real and can possibly provide an economic benefit to their food production system. Certainly, the Dutch have heavily promoted their program as the best in the world.

What mistakes can be avoided: Questionable if one-size-fits-all, as it is designed. Although officially voluntary, it is becoming mandatory for farmers to market hogs.

How robust are the forces driving the trend: The need to identify and differentiate products in an export market will be important. Consumers will continue to be concerned about where their food comes from.

United Kingdom

Context

- 58.9 million people
- UK is only 60 percent self-sufficient in its total food and feed needs
- Agriculture is intensive, highly mechanized, and efficient by European standards
- 20 percent of the UK farms produce 70 percent of the total farm output
- UK produces about 60 percent of food needs with only 1 percent of the labor force
- The average UK farm size is 72 hectares, compared to the EU average farm size of 17 hectares
- In March 1996 the EU banned UK beef and beef export products when BSE was firmly linked to Jacobs-Cruzfeldt Disease. More than 30 countries followed and banned British beef. The ban was lifted in November 1998
- Domestic confidence in the British beef appears to have returned, although the repercussions of the BSE crisis continue to be felt in the livestock sector. The value of beef production declined 6 percent (\$185 million in U.S. dollars) 1997, due to low demand
- Just five food retail chains control 50 percent of the retail market
- There is a lack of integrated cooperatives in the UK to offset the power of the supermarkets. GMOs are strongly opposed in the UK
- The largest supermarket chain (Sainsbury) announced it will remove genetically modified organisms from its own branded products.
- The UK has the strongest animal welfare regulations in the EU (e.g. banning the use of sow stalls and tethers)

Beef Report

The British beef sector is in turmoil following the BSE scare. Consumers are generally less trusting of their government and are more vocal about their food. Animal welfare and GMOs were major newspaper stories while we were there. Quality assurance “schemes” were widespread and necessary to sell cattle and hogs. Such schemes also were being developed for grain. Food retailers are very powerful in England and have pushed requirements back to processors and producers regarding how animals are raised. Animal welfare measures were among the first requirements. A separate “auditing” sector has emerged in England to develop the documentation and then audit these farms. At least one of these firms actively seeks new products for which to develop schemes. This system approaches a self-serving conflict of interest. Producers generally were dissatisfied with what is perceived as frivolous paperwork.

The Meat and Livestock Commission (MLC) has developed a “Farm Assured” program that is used for cattle, sheep, and a large percentage of the hogs. Farm Assured British Beef and Lamb (FABBL) certification requires a veterinarian to inspect and sign off on the site each quarter for the farm to sell livestock. The beef farm visited reported that 80 percent of the requirements were best management practices, were not difficult to achieve, and provided benefits to producers. The remaining requirements ranged from frivolous (fire exit signs in cattle barns) to absurd (clipping cattle prior to slaughter to remove any mud or manure).

The retail meat section had beef that carried three labels: British Assured Meat, Irish Quality Assured, and Scottish Quality Beef. It was reported that retailers were using quality assurance programs as promotional strategies among competitors. While demanded by retailers, it is questionable whether consumers make purchases based on quality assurance. As in the other countries, producers are not paid for the additional requirements placed on them. It was evident at the British meat counter where a sign read “Freedom Food: Animals raised in accordance to standards of the Royal Society for the Prevention of Cruelty to Animals – *At no additional cost to you.*”

What is driving the changes: England is an importer and there is an incentive to set high standards to protect their market. Retailers are driving the changes from a position of power to appease a vocal minority and play to the social conscience and food fears of consumers.

What is working: One can argue that nothing is. The third party audit has value, given the drivers of change.

What is real vs. what is rhetoric: The paperwork and audits are real, but the items measured go well beyond issues of food safety and food quality.

What mistakes can be avoided: The system was developed with limited producer involvement. There is distrust from producers because they have no buy-in. Auditing firms have gained a position of power and should be regulated.

How robust are the forces driving the trend: Consumers will continue to be concerned about where their food comes from. The British press is more reckless than the U.S. press, thus a system to assist in building consumer confidence is important.