



Managing for Today's Cattle Market and Beyond

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The Evolution of Identity Preservation in Red Meat Markets

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Introduction

Agriculture is challenged by the fact that product from many producers is routinely co-mingled prior to sale. In this environment there is little incentive to innovate, or to differentiate and often a counter-incentive to improve quality. Producers cannot individually benefit from product improvements because they compete on price, and packers and processors who co-mingle products from many producers cannot create credible branded images. As long as agricultural production chains rely on co-mingled products, those who buy the products might desire product improvements. But, co-mingling inhibits the ability to pay a premium for those who produce superior quality at the farm or ranch level.

Identity preservation, or "traceability" as it is often called, offers the potential for addressing many problems associated with the co-mingling of red meat and, consequently, also has the potential of accelerating the development of brand-name red meat products. Traceability is an important emerging issue since consumers have become increasingly concerned about the processes (inputs and methods) used to produce food. Many different claims can be and are made about what inputs or absence of inputs exist in food products. These claims may be problematic since, for example, a

product may claim to be free of Genetically Modified Organisms (GMOs), produced with sensitivity for animal welfare, produced using environmentally "friendly" processes, or "low-fat" and the potential for fraud exists if no credible system is in place to support these claims. Traceability can establish or affirm the reputations of producers and suppliers by communicating either positive or negative information to consumers. Since these issues relate to the inputs and methods used in food production, they must necessarily be concerned with being able to trace food and food inputs to their sources.

Traceability is obtained through a system of records and certifications that allow a product to be traced back to its origins. Currently most red meat is traceable back to the processor but not to the farm level. Establishing traceability prior to processing would require a system that is currently not in place in the United States. Such a system would need records of when animals were born, progeny of animal, when they were sold, the types of medications administered, feeding and handling regimes, slaughter location, grading information, shipment dates, location of retail outlet, and any other information handlers or consumers might desire. This will likely best be handled through electronic systems and such systems are currently being developed. These systems will also require

third-party certification. It is conceivable that in the near future any consumer questions about the origin, management, or processing procedures of a red meat product could be tracked all the way back to the farm or ranch where the animal was born (Coe).

Roots of Traceability Programs

Efforts to establish traceability have their roots in the *Bovine Spongiform Encephalopathy* (BSE)¹ scare in the United Kingdom in 1996. BSE is a disease found in cattle that may be linked to a possible variant of a potentially fatal human disease called Creutzfeldt Jacobs Disease. Two additional EU food crises occurred almost simultaneously with BSE. One of these outbreaks involved *Salmonella* contamination in Danish pork and the other *E. coli* that was traced to Scotland. The *E. coli* outbreak resulted in the deaths of 21 people (Liddell). These food scares coupled with a lack of confidence by EU consumers regarding government regulation of food safety has led to the establishment of traceback systems in Europe. Food safety and quality assurance characteristics are used in marketing efforts in the EU to differentiate food products as being safe, environmentally friendly, animal friendly, etc. Consequently, traceable systems have been developed in Europe to address the demand consumers have for expanded information about the food they consume.

Denmark has recently switched to full traceback in a plant capable of slaughtering 10,000 hogs per day (Meat International). Germany has successfully implemented traceability in at least part of its beef chain (EAN, 9/2000) and many smaller plants in the U.K. have begun to offer full traceback to producers. The Swedes allow retail consumers to use scanner information imprinted on retail pork packages to find a picture of the pork farmer and farm site via the World Wide Web (Swedish Farm Assured). In an aggressive initiative, the Australians (EAN, 6/2000) are establishing a track-forward/trace-back chain for beef with emphasis on both management and food safety. Their scope is from breeding to consumption and they have reported successful implementation through a demonstration project of most key components of this chain in the past 18 months.

While EU markets and consumers are different from US markets and consumers, the development of traceable systems that provide expanded

information about how food was produced and processed should be of interest to US red meat producers. If nothing else, the development of these systems may be a means for competitors to further differentiate their products in export trade. The development of domestic traceable systems may also offer new market opportunities here in the United States.

Overview of US Red Meat Market

The US beef and pork industries had farm-level sales of \$36.1 billion and \$13.2 billion in 1997, respectively (U. S. Department of Agriculture) representing over 24% of the annual gross income received by US farmers and ranchers. These two commodities are produced in virtually every state and are an integral part of most state's agricultural economies.

Structural changes in both the beef and pork marketing channels have generated considerable concern from producers. The market share for the four largest firms (CR₄) slaughtering steers and heifers rose from 30% in 1978 to over 80% by 1994 while the CR₄ for hog slaughter was 46% in 1994 (USDA, GIPSA). Vertical coordination in both the US cattle and hog industries has also concerned producers, especially in the hog industry where the number of hogs grown under contract is approximately 25% of the total market (Hayenga et al.). Increasing concentration raises questions about whether prices paid to farmers are competitive or not. But increasing coordination in the market channel also raises concerns about future market access, especially for small and medium-sized producers. Developing niche markets should increase the opportunities these farmers have to access markets for their products if farmers are aware of these opportunities and produce products in the form(s) desired by consumers.

Most pork and beef quality assurance/certification efforts in the US have their genesis in producer groups. These programs have materialized because producers have recognized that significant niche markets exist for consistent-quality beef and pork products and that other niche markets which address emerging consumer needs can be successful (e.g., Niman Ranch Pork).

Initial market tests by the Pig Improvement Company (PIC) suggest it may be possible to link genetic development to retail marketing schemes in

both the EU and US. That is, genetic development efforts could be directed at developing branded retail products (Brown). Such a move could have enormous implications since different genetic strains could be developed for specific markets and/or retailers resulting in revolutionary changes in pork marketing channel dynamics. The potential effects on producers and processors are obvious since producers would become directly linked with retailers by default. That is, when a farmer chose a specific genetic line he/she could potentially be limited to selling in a specific market or to a specific retailer. Opportunities for small and medium-sized producers may actually expand in such an environment since, rather than a single commodity market, the marketplace could become more of a blend of different niche markets. Products with traceable characteristics would be a key element of this type of marketing system because of the direct link between production and final product.

Structure of Traceability Programs

The development and speed of traceability programs for red meat in the US and elsewhere have been different. The reason for this is that different incentives have existed in different locations to implement traceability. In the EU, traceability programs materialized in reaction to food scares many European consumers believed were poorly handled by European governments. European consumers believed they were given slow and in some cases incorrect information about the potential

dangers posed to them. As a result, private certification has become an important part of European traceability systems from the perspective of food safety. In general, Europeans are also more concerned about animal welfare than US consumers and quality assurance programs² have evolved simultaneously with food safety issues as incentives for traceability in Europe. In the US traceability has been primarily a food safety issue with traceability generally established back to the processor but not to the farm level.³ US consumers generally have greater confidence in government inspection than European consumers and, as a result, little third-party private certification is done in US red meat markets.

Table 1 is a synopsis of information gathered by Liddell on pork market certifications in selected countries (the beef market is similar). A “High” rating in Table 1 indicates a large level of involvement for certifying that pork meets certain food safety or quality assurance standards.

Table 1 illustrates a higher level of involvement on the part of the private sector in the UK and Denmark than in the US, Canada, and ANZ in certifying food safety and quality assurance characteristics. Liddell also produced an overall rating system for traceability systems in selected countries including the UK, Denmark, Japan, Canada, ANZ, and the US. His findings suggested Denmark’s pork system had the highest level of traceability while the US had the lowest.

Table 1. Structure of Pork Market Food Safety and Quality Assurance Certifications in Selected Countries.

Food Characteristic	Private Certification	Public Certification
Food Safety	US – Low UK - High Denmark - High Canada - Moderate ANZ* - High	US - High UK - High Denmark - High Canada - High ANZ - High
Quality Assurance	US – Low UK - High Denmark - Moderate Canada - Low ANZ - Low	US - Moderate UK - Moderate Denmark - High Canada - Moderate ANZ - Moderate

* ANZ=Australia and New Zealand.

Source: Liddell.

While traceability has not been a central issue in red meat markets in the US, it has in the EU during the past four years. As a result, the EU systems have evolved at a faster rate than the US system. However, the traceability systems of other competitors, i.e., Canada and ANZ, also appear to be developing more quickly than the US. The consequences in the US may not be felt immediately, but the potential of the US losing market share in red meat markets in the future exists if competitors can successfully differentiate their products based on real or perceived food safety and quality assurance characteristics that can be certified and traced.

Conclusions

The US is lagging competitor countries in developing a traceback system for its red meat industry. Also, traceability is not a central issue being addressed by the US red meat industry at this time. Reasons for this are varied. For example, US consumers place more confidence in government inspections than consumers in other countries and the US red meat industry is less export-dependent than competitors that have developed sophisticated traceability programs. Consequently, US producers have been under less pressure to develop traceability programs than competitors. In some cases, US meat processors have not encouraged traceability programs because they have sometimes been perceived as “country-of-origin” programs. However, world markets are evolving toward more traceable systems because consumers appear to be demanding additional information about the food they consume.

The development of traceability systems in the US seems inevitable. US red meat producers and processors should be examining methods to provide more traceability in the US meat system not only from the perspective of reducing liability (e.g., tracing the source of food contamination), but also from the perspective of expanding both domestic and export markets.

References

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¹ Also known as “mad cow” disease.

² Quality assurance is used here to denote non-intrinsic characteristics in food such as animal welfare concerns or environmentally-friendly products.

³ Processors also view traceability as a means to limit liability.