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TRACEABILITY FOR THE PORK INDUSTRY: CHALLENGES AND OPPORTUNITIES

Introduction

The word traceability for the pork industry is often used indiscriminately throughout the world. Therefore, when traceability is used in different segments of the industry, it should be defined as to what is traced.

The USA consumer often defines traceability as a precise process starting with the pigs on the farm and tracing the specific meat cuts from the carcass to the retail stores, restaurants or other segments of the food service industries.

Individuals in other countries may have other definitions. In Denmark the term "forward traceability" (from soil to table) could apply to a diagnosed bacteria problem and the traceability process is used to help address the problem. An example would be Salmonella found in a herd. In this situation, it is used to identify where on the farm the salmonella is located so it can be corrected and, if needed, a recall of the pork can be initiated.

In Denmark, "backward traceability" refers to methods to improve market development. What characteristics of the pork and pork products does the market demand? This traceability system may only be between the retailer and packer.

From these examples, it is evident that the industry has already established different levels of traceability based on specific needs.

WHO HAS AN INTEREST IN PORK TRACEABILITY:

The first reaction to this question relates to the consumer. The consumer is asking for more information on wholesomeness of pork and a system is needed to provide this information. This was the stimulus in Europe for the traceability system(s). Federal and State regulators and university researchers have cooperated for years on identification – traceability programs to control and prevent swine diseases (more than 1,000 scientific articles reported). There is still a need, however, for an improved system tracking pigs back to the farm of origin. Therefore, interest exists for a good traceability system for disease control.

CURRENT TRACEABILITY SYSTEMS IN THE USA

Farm to carcass traceability exists in the USA for the majority of pigs sold directly to the packer from the farmer. Pigs purchased through the buying stations, however, may not be traceable back to the farm. The direct purchase system allows packers to report back to the farmer any disease or contamination problems found during the slaughter process. The USDA also has a verification program in place where production practices are verified.

The existing traceability programs in the USA allow packers and pork processors to cooperate with the retail and restaurant industries on marketing products for specific brands. An example would be

pork from the Berkshire breed for export to Japan. This example for traceability in the USA is for groups of animals and not traceability for individual pigs. Individual pig traceability and 100 percent identification of each pound of pork back to the live animal is much more difficult to manage and may not be practical at this time in the USA.

TRACEABILITY AND EXPORT MARKETS

Some countries that import large tonnage of pork have started to reflect more interest in traceability systems when contracts are established. This is another reason for the US pork industry to have a system in place if pork importers initiate traceability concepts for specific traits in contract discussions.

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An example is the UK. The UK is a traditional market for Danish pork. The UK recently established new standards for importation of pork to the UK. If Denmark wanted to continue the long tradition of selling pork to the UK they had to meet the new standards. It may be of interest to the US pork industry what the standards are for importation of pork from Denmark to the UK, as they require a tracing system.

The standards are listed:

- Danish laws on housing, salmonella control, feed ingredients (no antibiotics) must be implemented.
- Sows must be loose from the time they are weaned until entry into the farrowing house.
- No feed containing meat or bone meal can be used in the pig's diet.
- Documentation concerning feed composition is required.
- Documentation of production conditions is required.
- External control and documentation of health and use of medicine is required.
- No castration of boars.

To meet the UK import needs for pork from Denmark, about 30% of the Danish pig production had to meet the above standards (Staub, 2002). About 1,750 Danish pork producers are approved for UK export. In order

for Denmark to meet the new UK standards, a traceability system was needed which traces back to the farm.

GENETIC IMPROVEMENT THROUGH TRACEABILITY TECHNOLOGY

The current system used by the majority of US packers pay pork producers on a carcass value basis using predicted percent lean. This information is often reported to the pork producers and used for carcass improvement through genetic selection. This is an example of an existing traceability program. The US pork industry is to be congratulated for the great progress in reducing fat and increasing muscle in market pigs. It was the result of a good partnership between pork producers and the packing industry. This partnership can be expanded with improved traceability technology.

Some packers are experimenting with the measurement of longissimus (loin muscle) pH on the slaughter floor. If this concept results in good prediction of muscle quality, a traceability system can report the values back to the farmer and a quality component can be added to the pricing system. This is another example for advantages of a traceability system.

SPECIALITY MARKETS AND TRACEABILITY

Organic produced pork is a potential specialty product for the

industry. The EU is working on a legislative act for organic production of pork. The USA has not been successful in the development of uniform standards for organic pork production. The EU system would require traceability methods from grain production, to housing methods, to the use of animals' drugs and animal health as well as feed ingredients. Thus, a traceability system would have to be in place to regulate organic pork production. The system would be expensive. It is still a question if consumers will pay for the added costs associated with organic production of pork. Traceability costs become a major factor in the pricing of organic pork.

Natural pork is pork with no ingredients added and this is another example where pork companies are using traceability as a marketing tool. Some companies that are integrated from production through the slaughter and fabrication process are testing the market for natural pork. For example, they would use traceability technology to provide consumers information that the meat is free of antibiotics. This traceability method can be used as a marketing tool to build consumer confidence for pork from a specific company.

TRACEABILITY TO PROTECT HUMAN HEALTH

The most significant reason for establishing a pork traceability system for the meat industry is to

help protect the health of consumers. At this time in the USA, human health concerns are not a big problem for the pork industry. Potential problems, however, do exist. Therefore, should the industry position itself to reduce the risks of human health problems in the future? Good business concepts would encourage this approach before the federal government dictates specific practices for the industry. Traceability concepts could be an appropriate method to help protect the wholesomeness of pork and pork products.

BAR CODES AND DNA FOR TRACEABILITY METHODS

After observing pork slaughter and processing plants and visiting with management on potential interest in developing an improved traceability system, it appears that a bar code concept by itself may be a difficult system to trace from the farm to the retail level. The problems start when the carcass is cut into component parts. Some companies may have as many as 150 components cut from one carcass. Also, the speed of the cutting process is very fast and doesn't condone the use of bar codes unless new concepts are developed. Therefore, some companies in the USA are considering DNA methods to trace the pigs from the farm to slaughter and from slaughter to the consumer. The DNA technology is used by some companies for tracing beef cattle through the mar-

keting process in Australia. Some USA pork-processing companies are interested in this technology, but currently restrictions exist even for discussions due to confidentiality agreements. Information that is available reflects that the DNA technology for traceability is not cost prohibitive.

EUROPEAN SYSTEMS FOR TRACEABILITY

Some individuals in the USA pork industry reflected that the European countries have complete systems in place for traceability from the farm to retail or consumer level. Based on recent visits to Europe by members of the ISU traceability research group, only a veal plant in the Netherlands had a fully implemented traceable system from the farm to the consumer for all animals slaughtered. Some European pork plants developed a traceability system where upon request by the retailer, identified carcasses are transported to a fabrication plant and cut into wholesale or retail cuts and these cuts are marked so they can be traced from the farmer to the retail outlets. The number of requests for this process is small. All of the other carcasses are cut in the plant where the animal was slaughtered and the identity is lost during the cutting process. At this time, the European system for traceability is not that much different from the current USA system where pigs can be traced

back to a specific farm for payment of the animals.

COSTS FOR TRACEABILITY SYSTEMS AND CONSUMER INTEREST OF PAYMENT

An article in the July 2002 issue of *Pork*, the business magazine for professional producers, reflects on the consumer interest for payment of traceability costs. The article indicated that research results at Utah State University by Bailey and Dickson reflects that US consumers are willing to pay a small amount for knowing the background of the pork product. The research results came from a very small consumer study, and a much larger study is needed to obtain the real interest of the US consumer for payment of added costs for a traceability system. Buhr, (2001), based on observations of the European system indicated that no pork producer or processor in the EU could get a premium for traceable pork products.

For a veal production company in the Netherlands, however, added costs for veal from a fully traceable system appears to be well received by their customers. The costs for the fully traceable system for veal were high. According to Hays (2002) labor costs were 20% higher and facilities costs were also much higher than traditional systems. The sales, however, were good and the company management was pleased with the new system as it

brought outstanding consumer confidence to the company. This system would be cost prohibitive for pork plants in the USA. There are lower cost systems available for the pork industry, but the real costs for an improved traceability system for the US pork industry are still being evaluated.

FUTURE ADAPTATION OF TRACEABILITY TECHNOLOGY IN THE USA

The US pork industry is taking a slow, but thorough approach regarding the need, feasibility, and payback for an improved traceability system. Some segments of the pork industry are not supportive of a farm to a retail traceability system at this time. Some major companies at the packer and retail level and even many farmers do not feel that the need is great enough to off-set the costs and management problems which would be associated with a

new traceability system.

No USA company is in a position to initiate a farm to a retail traceability system in the near future. A system from the farmer to the packer could be developed but with added costs. This would be helpful for disease control and improvement of carcass value.

From the information our research team collected in recent months, some USA companies will develop some kind of improved traceability system with profit and consumer confidence as the focus of the system. If they are successful, the remainder of the industry will follow.

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