Traceability is a key component of EU food safety legislation

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Abstract:- in order to protect food safety and the reliability of the information provided to consumers, traceability is necessary, this article through to the European food safety traceability system research, puts forward the problems of food safety traceability system and improvement measures.

Key words:- European food safety traceability system; Problem; Measures; research

I. INTRODUCTION

With the development of the food industry and the continuous improvement of food safety requirements, food safety issues have increasingly become a cause for concern of consumers around the world. The difficulty of food safety control and the loopholes in control not only offer the potential to affect the health of consumers, but may also have a significant negative impact on the country's social stability and economic construction as well as the country's international image. Food traceability has the potential to protect consumers against unsafe food and can allow recalls to be more readily enacted. It can also eliminate issues relating to non-expendable food, and promote the investigation of food safety issues such as food safety, food quality, food protection and food supply chain requirements components.

II. LITERATURE REVIEW

What is "traceability"? According to The European Union (EU) regulation 178/2002 (EU, 2002), "Traceability" is defined as the production, processing and distribution of the various stages of any aspect of any food, feed for consumption, the ability of animals or food related substance. Regattieri *et al.* (2007) argue that the steps of product identification are the basis for retrospective systems. Moe (1998) considers that the only identification and traceability in any system depends on the definition of traceable resource units (TRUs), which is a unique unit of measurement. According to article 3 of EC / 1760/2000, one of the most important factors in the bovine animal identification and registration system is the unique identification of each animal. The US Department of Agriculture's Bureau of Economic Research pointed out that, in addition to ensuring safe food supply, the use of traceability systems can reduce the cost distribution system and reduce recall costs whilst increasing the difficulty of selling products (Golan *et al.*, 2004). Therefore, every individual involved in the food supply chain must store the necessary information related to the food associated with the product so that information can be provided to the food inspection agency in a timely manner. Previous studies have emphasised the importance of internal traceability systems (Moe, 1998).On January 12, 2000, the European Union published the White Paper on Food Safety, which regards food safety as the main objective of the EU food law and forms a new framework for food safety systems. For the first time this action incorporated the entire process management principle from the field to the table into the health policy. It stressed the responsibility of food producers in terms of their responsibility for food safety and introduced the HACCP system which required the traceability of all food and food ingredients. The EUregulation 178/2002 (EU, 2002), issued in January 2000, requires that all food sold within the EU can be tracked and traced from 2004 onward, otherwise it will not be allowed to be marketed. Foodstuffs, feedstuffs, foodstuffs for food production and articles related to food and feed manufacturing must be established and verified at all stages of production, processing and marketing. The system regulates the mainstay of the various stages to ensure that the source and direction of the various providers are identified.

III. DISCUSSION

The content and technology of the EU Food Safety Traceability System

In accordance with the provisions of the European Union, food, feed, food for the manufacture of livestock, as well as food and feed manufacturing-related items, its production, processing and sales at all stages must be verified by a food safety traceability system. The system regulates the mainstay of the various stages to ensure that the source and direction of the various providers are readily identifiable.The first aspect to be considered is the production stage. The production stage is a particularly important element of the food supply chain. Cattle are a representative example. Cattle breeders must operate in strict accordance with the corresponding

operational management procedures. From the birth of every cow, the breeder must ensure that the animal is life-marked with a unique identification number. Throughout the breeding process, the feed source, veterinary epidemic prevention, feeding and management and other related information is entered into the computer management system. This number is the cow's "ID card". This "ID card" is divided into three parts: the first part is sent to the local government management department. The second part relates to the originating farm, the third part involves the assignment of cattle to the slaughterhouse. The EU and the member governments of the Member States will be able to obtain relevant information at any point throughout the system. At the same time, in accordance with EU Directive 2000/1760 / EC, all cattle born after December 31, 1997 or cattle sold in the EU area after 1 January 1998 must be linked to each other. The labels must have separate checksums. If there is no label, the animal must not be transported further. For cattle imported from countries outside of the EU, it is also necessary to add an ear tag to the cattle in accordance with the above provisions. The ear tag may not be moved or replaced without the permission of the competent authority of the Member State.

The next step is the processing stage. The processing stage is another important element of the supply chain. The processor must operate in strict accordance with the operational and managerial procedures. The details of slaughter and the processed relevant information will be entered into the computer management system. In order to facilitate the retrospective, the number of slaughtered cattle will be numbered. There will be many types of numbers which can be used to reunify the cattle from the same rearing farm under the same feeding and management conditions. As a slaughter unit, cows are individually identified by a number. If processed meat and pork is mixed during the production of mixed meat products, the label which is included with the product must state the type of source animal, what parts were used, the number of meats mixed, and the geographical origin of these animals as well as the slaughterhouse and slaughter and processing process operator's name and so on.

Finally, there is the sales stage. When food is entered into the market for sale, the product label should be included in all aspects of information related to the food supply chain. For example, the label content of the beef sale should include: the reference number (which ensures the connection between the beef and the slaughtered cattle), the approval number of the slaughterhouse, the approval number of the cutting plant, the place of birth of the cattle, the country of the country Third country) and the slaughtering country. For beef imported from a third country outside of the EU, the label shall be marked "Place of origin: non-EU country" and "slaughter place". This information is also stored during the production, processing, sales and local government departments, including the various aspects of the information base. The product sold two months after the clearance is allowed to clear the relevant information. If consumers buy food problems, the produce can be traced back along the information chain to the farm (including feed, veterinary drug production), slaughter and processing, storage, transportation, circulation and other links. This makes it easy to control the spread of food problems whilst increasing accountability.

At present, the EU is using the internationally accepted Uniform Identity System (EAN · UCC) system for food safety traceability. The European Union uses the EAN · UCC system to track food. The advantage of retroactivity is that the system is now widely used in the retail and logistics industries in the global supply chain and avoids the time and resources of many systems that are incompatible with each other. This reduces the operating costs of the system, and achieves rapid and accurate information flow and real seamless linkage. The EAN · UCC system mainly includes the following three parts: first, the coding system, including trade projects, logistics units, assets, location, service and other identification codes, EAN · UCC code with the product or service generated in the circulation source, and accompanied by the whole process of product and service throughout the circulation. This is the key to information sharing. Secondly, the data carrier, including bar code and radio frequency identification. Thirdly, data exchange, in order to make the relevant information on the supply chain can flow freely among trading partners, EAN · UCC system through the circulation of electronic data exchange specification for information exchange (KONG *et al.*, 2004).

The role of the European food safety traceability system

Firstly, the European Union, through the implementation of the traceability system, covers every aspect to ensure seamless supervision. Ensuring food traceability checks from production to sales of each link effectively improves the efficiency of the handling of food safety accidents and constraints for the food industry practitioners. Secondly, reducing food borne disease infection is conducive to food-borne disease outbreak of the product recall. Thirdly, the quality of food crisis erupted. The system helps enterprises to find the cause of the problem and the degree of risk. The administration would reduce the risk in the process of production to the lowest level. Fourthly, the system allows the consumers to know the origin and have knowledge of the processing of food products. Consumers can find the food source through a terminal system. They may also find information about the production process, and therefore decide whether to buy.

The European food safety traceability system, existing problems and improving measures
The traceability system is not isolated. It needs to be combined with other quality management systems which can play a valuable role. At present, to ensure the food safety implementation method is an international HACCP, GMP, SSOP and IS09000, are effective way to control the safety problems in processed foods, but lack of the entire supply process link. The crux of the problem lies in the interlocking aspect whereby if one link is broken, the whole chain is disconnected and the relationship between each link in the supply chain is fragile, this is the biggest problem to implement tracking and tracing. Therefore, the process is most effective information after the completion of the recording (including production, processing, storage and transportation, distribution, marketing, etc.) and the quality and security of the relevant information is recorded with the inclusion of video and recorded time. The necessary information that can not be changed must be completely securely encrypted. It must be available to allow the consumer to query the original video records, given the consumers' right to know. Where conditions permit, of course, this information must be available in the first instance, it may then become gradually popularised. In fact, it is not,the more primitive the food is not, the better,because the animal and plant itself contains toxic substances in the body, such as medicinal plants was poison and side effect), and the air, water and soil pollution caused by food contamination problem (like my hometown such as certain food containing cadmium metal), how to with the development of science and technology in the production, such as genetically modified (gm) food production, processing, especially to remove food processing including medicinal plant toxins from the body, it remains to be further research.

IV.   CONCLUSION

Traceability is necessary to ensure food safety and the reliability of the information which is provided to consumers. In particular, it is necessary to apply traceability to all foods in order to help remove unsafe food from the marketplace, thereby protecting consumers. Traceability allows for a targeted withdrawal and recall of products when necessary. It also assists in the provision of accurate information to the public.

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