

The Beef Traceability System in Japan

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INTRODUCTION

Japan has a strict traceability system for beef products. Using a unique identification number labeled on a beef product, consumers can get detailed information on the beef cow from which the beef product was made. This paper provides a brief history and a concise description of the beef traceability system in Japan and the many players involved.

The outbreak of BSE and the introduction of the beef traceability system

In September 2001, the first case of a cow infected with bovine spongiform encephalopathy (BSE) was reported. This news affected the Japanese consumers, causing a sharp decline in the sales of beef¹.

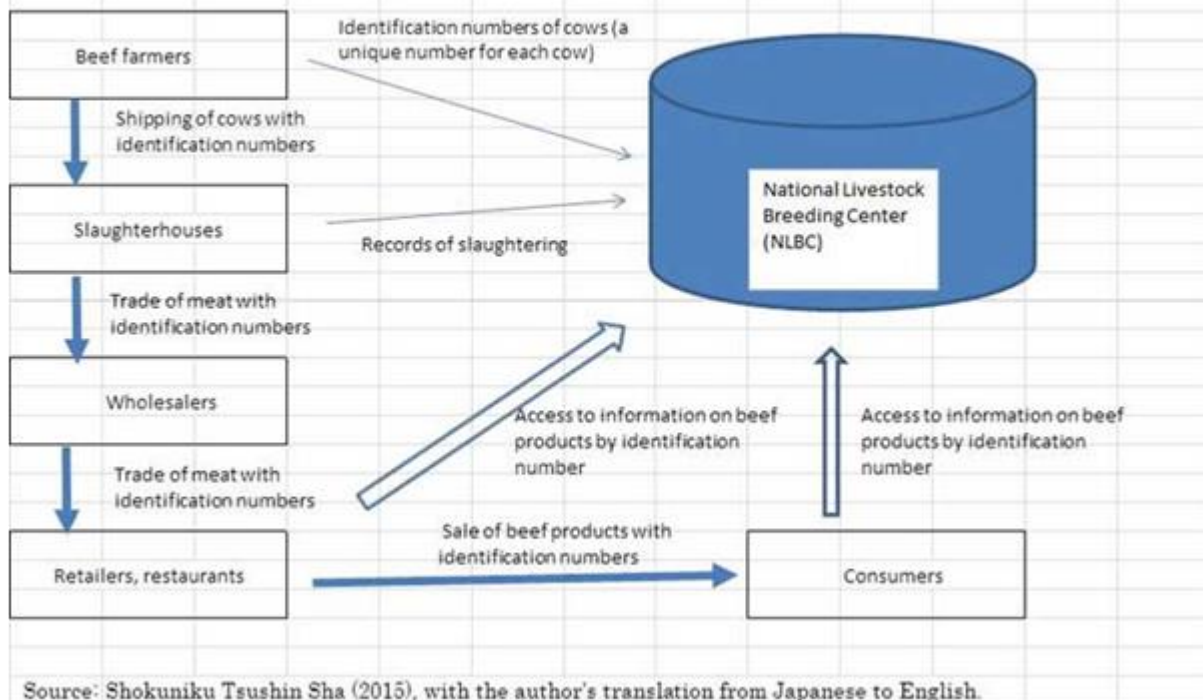
This experience motivated the Ministry of Agriculture, Forestry and Fisheries (MAFF) to introduce a traceability system for beef products, and its approach in achieving this had two motives. First, by improving the transparency of all the production and marketing processes of beef products through the traceability system, the MAFF aimed to mitigate consumers' fears about the safety of beef consumption. Second, in the case that a BSE infected cow is found, the MAFF requires meat wholesalers, retailers, meat processors, and restaurant owners to withdraw all the meat products made from cows raised in the same farm and recall from the market those products based on identification numbers (as there is a general agreement among scientists that BSE is spread by feeding prion-infected meat-and-bone meal to cows, all the cows raised in the same farm as a BSE-infected cow are suspected for BSE infection)

The law providing a legal framework for Japan's beef traceability system is entitled "The Act on Special Measures Concerning Traceability of Beef Products", commonly known as the "Beef Traceability Act". It was established in June 2003².

The structure of the beef traceability system

The outline of the traceability system is as follows (Fig. 1):

Figure 1. The Outline of the Beef Traceability System



- (1) The National Livestock Breeding Center (NLBC), an independent administrative agency, is in charge of compiling and keeping the record of each beef cow in the electronic ledger for the beef traceability system.
- (2) When a beef cow is born, the beef farmer tags its ear with a unique ten-digit identification number.
- (3) When there is a change in the situation of a beef cow (e.g., death, shipment for slaughterhouse, and being purchased by a beef cow trader or another beef farmer), the beef farmer reports it to the NLBC with the identification number³.
- (4) When a beef cow is slaughtered, the slaughterhouse reports it with the identification number to the NLBC and tags the carcass with the identification number.
- (5) Wholesalers, retailers, meat processors, and restaurants are responsible for maintaining and passing on the unique identification number throughout the process chain, from slaughtering the cow to selling the final beef products⁴.
- (6) The NLBC keeps a record of eight attributes of each beef cow: identification number, birthday, gender, breed, the unique identification number of its mother cow, the dates of trade between beef farmers and beef cow traders, the date of slaughtering or death, and the place of the slaughter house⁵. Consumers can access this information on NLBC's homepage by inputting the unique identification number labeled on the beef product.

Information on cow breeds

Generally, there are two types of cow breeds, one developed for milk production, such as Holstein and Brown Swiss, and the other for meat production, such as Aberdeen Angus and Hereford. In Japan, not only are the cow breeds developed for their meat but they are also those developed for their milk. In fact, they are often raised for a few years and are eventually slaughtered for their meat. A majority of Japanese consumers show a preference for *wagyu*, a common name of beef cow breeds developed in Japan. However, it is difficult to

distinguish *wagyu* beef products from others based on their appearance alone. Hence, the information on cow breeds provided through the beef traceability system is particularly valuable for Japanese consumers.

The NLBC classifies mating of cows among breeds into 12 patterns (numbered as 1 to 12) for the traceability system (Table 1).

Table 1. Numbers used for Classification of Breeds in the Beef Traceability System

		4	5	6	7	8	10	11	1	2	12	3	
		Breeds developed for meat						Breeds developed for milk					
		(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	
		Japanese Black Cattle	Japanese Brown Cattle	Japanese Shorthorn Cattle	Japanese Hornless Cattle	Hybrid between (A) and (B)	Hybrid among (A) to (D) except for the pattern of (E)	Other breeds developed for meat	Holstein	Jersey	Other breeds developed for milk	Hybrid between a breed among (A) to (G) and a breed among (H) to (K)	
4	(A)	4	8	10	10	8	10	11	3	3	3	11	
5	(B)	8	5	10	10	8	10	11	3	3	3	11	
6	(C)	10	10	6	10	10	10	11	3	3	3	11	
7	(D)	10	10	10	7	10	10	11	3	3	3	11	
8	(E)	8	8	10	10	8	10	11	3	3	3	11	
10	(F)	10	10	10	10	10	10	11	3	3	3	11	
11	(G)	11	11	11	11	11	11	11	3	3	3	11	
1	(H)	3	3	3	3	3	3	3	1	12	12	3	
2	(I)	3	3	3	3	3	3	3	12	2	12	3	
12	(J)	3	3	3	3	3	3	3	12	12	12	3	
3	(K)	11	11	11	11	11	11	11	3	3	3	11	

The methodologies for beef farmers to report the situation of their cows to the NLBC

Accessibility to the NLBC differs according to beef farmers. Thus, the MAFF prepares the following seven ways for beef farmers to report the situation of their cows to the NLBC.

(1) By fax

Beef farmers report the change in the situation of the cows by sending a special card to the NLBC by fax. Then, operators of the NLBC input the data to NLBC's server. This procedure is convenient for the beef farmers who are unfamiliar with computer-based technology. However, there is a time lag between the fax report and the updating of the record in NLBC's server. Moreover, the risk of human error is inevitable in this procedure. Thus, the MAFF suggests using it only when the other six ways (mentioned below) are impossible.

(2) By push-button telephone

The NLBC has a push-button telephone number for receiving reports from beef farmers. Similar to fax, a push-button telephone is convenient for those unfamiliar with computer-based technology. However, compared with fax, the information delivered by the push-button telephone is immediately recorded in NLBC's server. In addition, because this system has voice guidance, the risk of human error is lower compared to that of using the fax machine.

(3) Through the NLBC website

The NLBC has a website for receiving reports from beef farmers, who can access it through a PC.

(4) By handy terminal

There is a portable gadget, called "handy terminal," which reads the bar codes on the ear tags of cows and automatically transfers the information on the situation of cows to the NLBC server. This procedure is convenient for those who raise a large number of cows.

(5) By emailing batch files

The NLBC accepts collective electronic file transfer protocol from beef farmers. This procedure is also convenient for those who raise a large number of cows.

(6) By electronic file transfer protocol

Instead of individual beef farmers, agricultural groups collect information on the situation of cows from their members and report it to the NLBC by electronic file transfer protocol.

(7) By access to NLBC's application for cell phone

The NLBC has an application for cell phone to receive reports from beef farmers through cell phones.

MAFF's role in the beef traceability system

CONCLUSION

Keeping close communications with the NLBC, the MAFF supervises the operation of the beef traceability system. As part of the supervision, the MAFF collects pieces of meat from the carcasses at slaughterhouses and conducts spot tests for beef products in the market. By comparing the DNA between a sample from a carcass and that from a beef product in the market, the MAFF investigates whether the identity number is correctly conveyed among wholesalers, retailers, and restaurants.

If the MAFF finds a violation of the Beef Traceability Act, it announces the name of the company or the person responsible and gives an official counsel to him/ her. If he/her does not accept the counsel, the MAFF applies penalties based on the Beef Traceability Act.

Footnotes

¹The Japanese government has reported 37 cases of BSE since September 2001. January 2009 was the last reported instance of BSE in Japan. More information is available at http://ap.ffc.agnet.org/ap_db.php?id=192.

²The Beef Traceability Act came into force in two steps. On December 1, 2003, the traceability system started with only beef farmers and slaughterhouses. On December 1, 2004, the system was extended to wholesalers, retailers, and restaurants that treated the designated beef.

³If a cow is traded between two beef farmers, both the former and the new beef farmers are responsible for reporting the trade to the NLBC. If a livestock trader (including agricultural cooperatives) purchases a cow without finding a new owner and keeps it for a considerable period (in principle, more than seven days), the trader should report as being a temporary new owner.

⁴Principally, wholesalers, retailers, restaurants, and processed meat producers are obliged to keep record of the identification numbers until a beef product is delivered to the consumers. However, delivering the identification number to the customers is technically difficult for some types of beef products, for example, minced meat, take-out style beef products, ham, and sausages, and hence, these are exempt from that obligation. The beef products whose identification numbers are not exempt from being delivered to the consumers are called *tokutei gyuniku* (literally, "designated beef").

⁵For a foreign beef product, the date of import is recorded.

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