

TRACEABILITY OF BEEF PRODUCTION AND INDUSTRY IN FRANCE

Unique identification number, passport, movements, slaughtering number...

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Abstract: The French cattle tracing system results from a long evolution, which began in the mid sixties for cattle selection purposes. In addition to its main objective which is cattle tracing and sanitary uses, the system is widely used by many breeder organisations for very different uses: parentage recording, performance recording, herd book keeping, breeding value calculation and animal marketing.

The organisation of this system consists on two levels: the breeder organisations level and the level of the national identification database, which is run by the Ministry of Agriculture.

The Ministry of Agriculture commits some of the breeder organisations to perform some of the tracing operations: ordering the official eartags, data collection and animal passport printing. The system is designed in order to allow the breeders to provide data only once, independently of their future utilisation as well as to facilitate access to data for other utilisation than cattle tracing. Consequently, the official animal passport gives the official parentage, and electronic data interchange between the information systems of the breeder organisations allows easy access to data of the official tracing system.

At the entry of slaughterhouses, the passport corresponding to the identification number of the animal on the eartags is recorded in the local database with the unique number of slaughtering and sent to the national identification database. This number of slaughtering follows all the parts of the carcass, till the pieces of meat.

Keywords: Identification, Tracing system, French cattle

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1. CATTLE INDIVIDUAL IDENTIFICATION

The traceability of beef meat began with the individual identification in many big breeding countries. It has been compulsory in all the European Union since 1998, in Australia and New Zealand one year after, then in Canada, and after Japan, Brazil, Uruguay, Mexico, Argentina, Chili...

Traceability is a necessity for four reasons developed under:

1.1 To eradicate some animal diseases and to manage sanitary crisis

For eradication or management plans relative to designed diseases, control veterinarians from the Ministry have to check that all cattle get compulsory vaccinations and regularly realize blood tests.

These tests may give a positive result. In such cases, the veterinarian responsible for the test needs to find very quickly all animals which could have been in contact with the sick one. Indeed, depending on the disease (ESB for example), all these animals will have to be destroyed.

For this purpose, he must have access to all movements of the sick animal since he was born but also to the list of those who were present in the same holding at the same moment.

Therefore, farmers and databases need to get the list with all alive cattle, updated with each movement of animal, in or out.

1.2 For safety of human food

To protect consumers from any sanitary risk in food, some technical ways of breeding are forbidden: for example hormones or some medicine given to cattle.

From the birth where the identification number is fixed to the animal till the agreed slaughterhouse where the animal will be transformed into pieces of meat, breeding systems are followed to make sure that animal hasn't been present in any holding which wouldn't have respected this rules.

In any case of sanitary doubt, the cattle concerned is destroyed.

1.3 For herd management

The same official individual identification can be used by the farmer or technicians who manage animals of the herd.

For example, choosing the insemination bull to inseminate a particular cow, depends on its performance characteristics: it's important that both performance record and insemination technicians use the same identification number for the animal.

These crossed uses of official identification by many users have also great favorable consequences on reliability of data: the more users use a number the less mistakes will remain in database because they'll be detected and corrected, while an identification used only yearly for the administration may have failure.

1.4 For cattle trade

When some alive cattle or carcass is to be sold abroad, importer asks for identification number and data about the animal, on one hand to guaranty on the sanitary quality and on the other hand to get technical data about animal as breed, birth place or even parentage.

2. THE FRENCH SYSTEM OF TRACEABILITY

The traceability of beef means that all cattle get individual identification numbers just after the birth, and then all the movements of all cattle are recorded so that trace back is possible to find all the animals in contact anytime. And this is anywhere till the slaughterhouse or the natural death.

2.1 The French history of identification

In France the first law on breeding was in 1966. It defined rules of a permanent individual identification for volunteers breeders who needed it for technical reasons: when you want to select mothers and fathers for genetic improvement and to sell bulls and heifers, private working number is no more sufficient.

After this genetic purpose, the sanitary crisis pushed the official identification complete itself after 12 years. In 1978, this permanent individual identification was widespread and became compulsory for all breeders and all animals, this time on the official purpose of traceability of cattle. At this date, all farms were recorded with a unique number of premises, all births were notified very soon after born with an individual unique number and all movements between premises were also notified and recorded.

This compulsory identification was widespread to the whole European Union by the regulation of 1998 which makes compulsory the traceability of the beef meat till the pieces of meat with a system of labels for the consumers and specifies the necessity of a national database for alive cattle data.

2.2 General French organization

From the beginning of the national system, French Ministry of Agriculture delegates all the work of identification to local breeders organizations, named “EDE” which are responsible each of them for a defined geographical zone. There are around 70 EDE to manage with 250 000 cattle herds and 20 millions of cattle.

A technical organization, named Institut de l’Elevage (French Livestock Institute), supports the Ministry, to coordinate the implementation of the identification:

- to define methods which have to be the same for each level
- to help for the implementation of each level
- to control each level

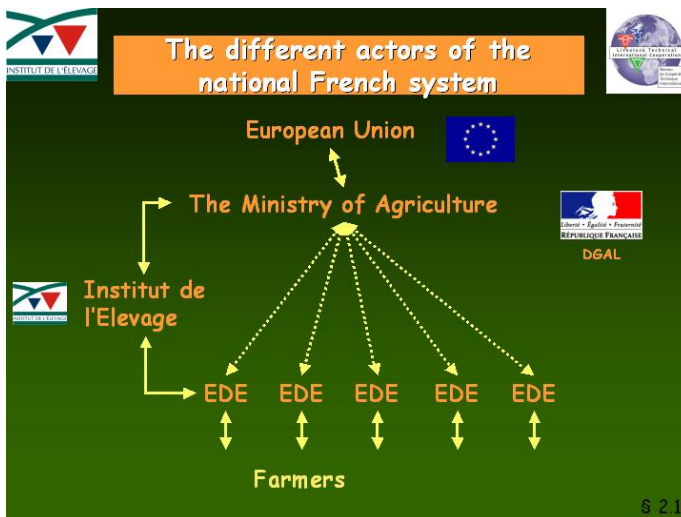


Figure 3. The national French organization

2.3 What is identification from the birth till the slaughtering, and who realizes it?

2.3.1 Identification of the calves

For a long time, it has been a technician from the EDE, who applied the eartag to the calves, when he passed once each three months on each farm.

In 1998, the European Commission decided that the calves have to be identified before 21 days of age, so the farmers were charged to put the two eartags themselves.

The farmer orders to the EDE only the number of eartags he needs for the calving year : the uniqueness of the numbers granted is the responsibility of the EDE (and the State behind). When some eartags are not used or damaged, the farmer has to give back to the EDE.

To trace the data of any system (genetic, herd management, trading...) the same unique identification number has to be used by anybody for the animal.

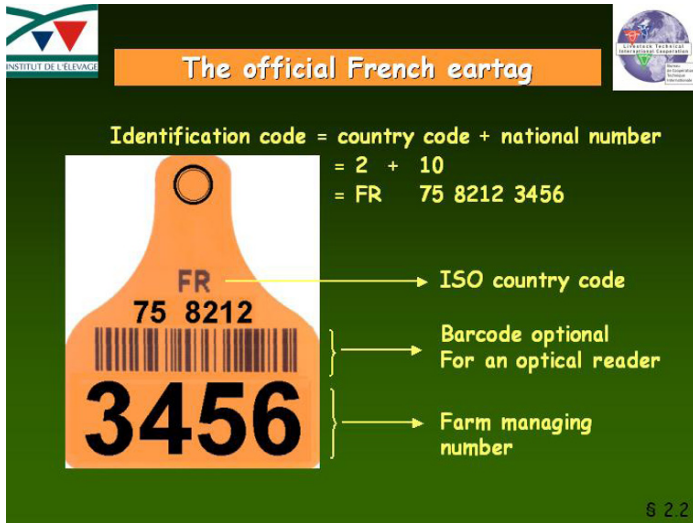


Figure 2. An official French eartag

Some electronic (RFID) eartags can be used now, but it doesn't change a lot in the identification system: it only permits an automatic reading of the identification number of the animal with a receiver, instead of a visual reading by the farmer and reporting to a paper, and then recording it in a database. This can avoid many human mistakes on the number.

When RFID is used to identify animals, the ISO standards 11784 and 11785 have to be taken in account.

2.3.2 The notification of all events on the farm

The farmer has to declare all events on the annual book of the herd:

- the births with the identification number, birth date, sex...
- the entries on the farm, identification number of new animals
- the exits from the farm with the date of departure to slaughterhouse, other farms or death.

2.3.3 Record of data and controls

The record of all information sent by the farmer is done by the EDE (or directly by the farmer with specific software and sent by an electronic net) after some controls on the data in the local database.

2.3.4 The French cattle passport

After recording a birth, the data are sent to the national database to check them at this level, and errors or OK are coming down to the EDE before to print the passport. The passport has to follow the animal all his life, till the slaughterhouse and after they are recovered to be destroyed.

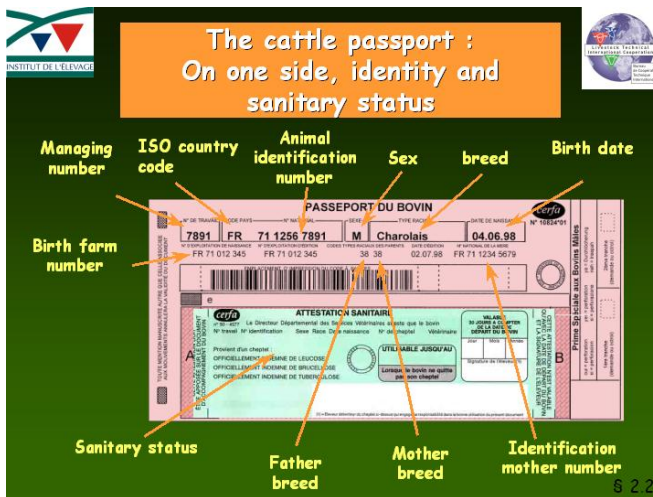


Figure 3. A face of a cattle French passport

2.3.5 Controls before slaughtering the animal

Before the animal have been slaughtered, the identification number between his passport and his eartags are checked : if there is not the right passport, the animal is not slaughtered.

If the passport corresponds to the animal at the entry of the slaughterhouse, a unique slaughtering number is associated to the identification number: a number with slaughtering date and an order number on the chain.

This short number is easier to use for the work on the chain, but one eartag stays on the carcass till the cold chamber, in case of any doubt on the identification number.

2.3.6 Controls on the carcass and pieces of meat

A label is printed with many barcodes to stick on each piece of carcass. On the label you find with the identification number, all the data from the passport (birth farm, birth date, breed, sex, type of animal) and the slaughtering data (slaughter date, place, weight).

The European regulations and French standards ask for 3 types of checking :

- Controls from the slaughter
- Controls from private firms agreed for that (EN 45011)
- Controls from veterinaries of the Ministry of Agriculture



Figure 4. The label on the carcass

2.4 The roles of the Ministry of Agriculture

All the technical work is supported by French Livestock Institute and validated by the Ministry.

That means the Ministry has the responsibility of the EDE and agrees them, the EDE have to help and check the operations of the farmers and other stakeholders. The Ministry agrees the official eartags on the results of laboratory and field tests and the official documents.

The Ministry validates the field procedures on the proposal of the Institute. The same for the data exchanges between agreed computer centers.

The Ministry manages the national database himself.

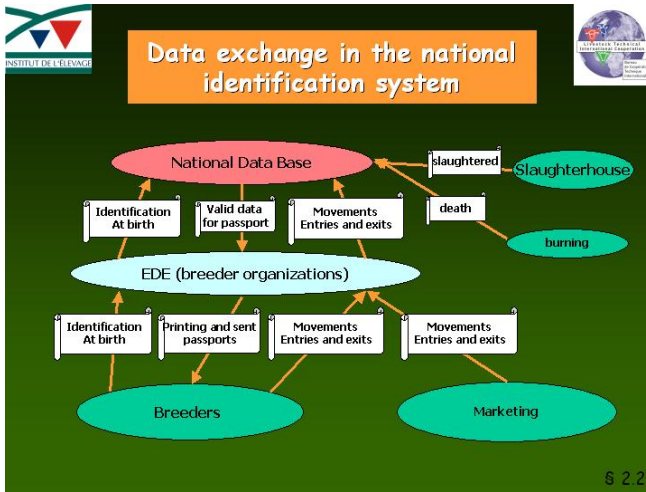


Figure 5. Data exchanges in the French identification system

Identification and genetic data are managed in the same information system.

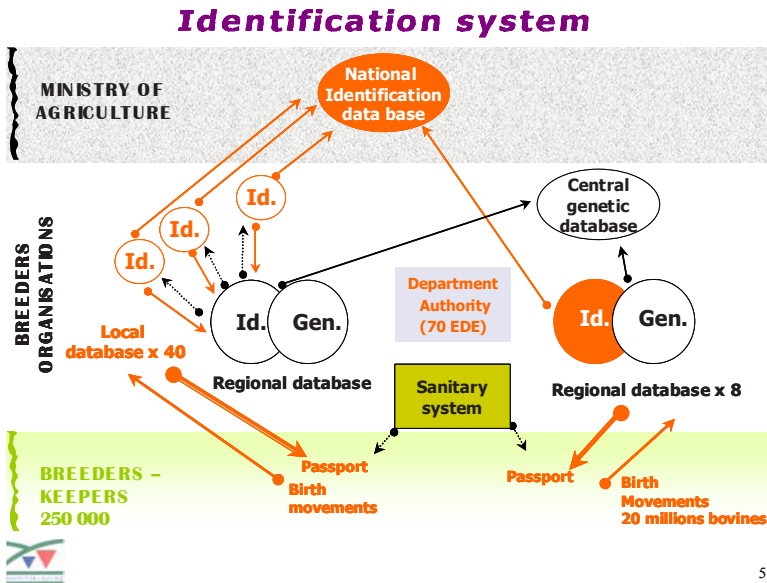


Figure 6. French information system

3. CONCLUSIONS

It takes long time to get an identification and traceability system like this one to be reliable. That's why it is necessary to plan several steps till the final aim and first with only some of the more interested farmers and stakeholders.

The global databases system is not the most important first, the main question is to collect the real data on the field and record them perhaps only locally but with a good reliability. And this point needs a lot of explanations and interest to be well done.

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