
French experience in animal identification and traceability

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As for the 15 states of the European Union, EU, an operational traceability has been existing in France for several years. An organisation for services to breeding, the OSB, owned by breeders under government's supervision operates traceability in addition to other services linked to animals such as performance and parentage recording, pedigree keeping, artificial insemination, genetic evaluations and sire selection and semen production. Since its establishment thirty years ago, the OSB had to cope with many changes. In 1970 less than 10% of animals were identified mainly for selection purpose while now the OSB operates traceability for 23 millions bovines and 250 000 breeders to meet food safety and beef market requirements. The OSB performs holding and animal numbering, data collection, checks and management, as well as their transmission to the Government's National Identification Data Base (NIDB) and assists breeders who pay 90 % of the costs. The NIDB is managed and paid by government who provides breeders with passports which are required when animals are moving from one holding to an other. To improve the system several projects have been launched, to use electronic identification, to increase electronic data transfer and to implement a quality management according the ISO standards.

Keywords: cattle sheep goat identification traceability.

Comme pour les 15 pays membres de l'Union Européenne, UE, un système opérationnel de traçabilité existe en France depuis plusieurs années. Une organisation des services en élevage, OSE, gérés par les éleveurs et soumise au contrôle de l'Etat assure la traçabilité en plus d'autres services liés aux animaux comme le contrôle des performances, l'enregistrement des parentés, la tenue des livres généalogiques, l'insémination artificielle, l'évaluation génétique, la sélection des reproducteurs et la production de semence. Depuis sa création il y a trente ans, l'OSE a du faire face à de nombreux changements. En 1970

Summary

Résumé

moins de 10 % des éleveurs et des animaux étaient identifiés principalement pour la sélection tandis qu'aujourd'hui cette organisation assure la traçabilité de 23 millions de bovins de 250 000 éleveurs pour satisfaire les exigences de sécurité alimentaire et du marché de la viande. L'OSE assure la numérotation des exploitations et des animaux, la collecte, la vérification et la gestion des données ainsi que leur envoi à la base de données nationale de l'identification, BDNI, de l'Etat et l'assistance aux éleveurs qui financent 90 % des coûts. La BDNI est gérée et financée par l'Etat qui fournit aux éleveurs les passeports des bovins qui sont exigés en cas de mouvements entre exploitations. Pour améliorer le système plusieurs projets ont été lancés pour utiliser l'identification électronique, accroître les échanges de données informatisés et pour mettre en place un management de la qualité conforme aux normes ISO. De plus, suite à une nouvelle réglementation européenne l'identification ovine et caprine sera renouvelée en 2005.

Origin and evolution

Traceability is recent, but animal identification has been existing for a long time in France as in many other countries. Until the seventies, few animals were identified. Milk recording organisations, breed societies and animal health associations used different means of identification, such as tattoo or metallic ear tags, and different identification numbers. These systems were sound and met well the needs of each organisation but often the same animal could have several ear tags with different identification numbers and data exchange were difficult.

From 1970 to 1996

In 1970, mainly in order to increase the use of improved sires by artificial insemination, Government and farmer unions, established OSB for services to breeding. It had to provide cattle, sheep and goat breeders with parentage and performance recording, pedigree keeping, genetic evaluation and artificial insemination from improved sire.

A centralised animal electronic file of recorded animals was also created as well as data processing centres and a unit responsible for rules, standards and procedures for animal identification, parentage recording, performance recording and data management.

Though, many changes occurred, these basic principles remained unchanged until now.

From the seventies animal identification expanded. For cattle the main stages were, 1980, for the identification of all bovines of more than six months old for disease control and eradication and 1995, the identification of all the bovines at birth for premium check following the EU's decision to give animal subsidies.

In 1996, the Bovine Spongiform Encephalopathy, BSE, crisis occurred. It resulted in a dramatic decrease of beef consumption, about 25 % in France. At the end of 1997, in order to regain consumer confidence with full traceability, for food safety and to eradicate BSE, the EU decided to establish a compulsory labelling for beef based on cattle traceability from national data bases.

In 1998, the French government asked the OSB to operate cattle traceability because of its expertise in animal identification and animal data management. The implementation was rather fast. At the end of 1998 it was completed for breeders. In 2000, the National Identification Data Base, NIDB, designed with the assistance of the OSB, through Institut de l'Élevage, started from data already recorded by the OSB information system.

The EU is responsible for the basic regulations to be implemented by the member states. These basics consist of holding definition, standards for farm and animal and identification, animal keeper's obligations, data to be recorded and sent to the Government.

The EU checks whether the member states comply with the European regulations.

Each government is responsible for the design and implementation of its own system, for complementary regulations, penalties for breaking the regulations and approvals of legal ear tags. In France a regulation defines the organisation of the OSB and the way to perform farm and animal identification, data checks and collection.

For identification and traceability, the OSB has 70 local operational units, called EDE, 10 data processing centres, called ARSOE and one unit to elaborate standards, rules and procedures implemented by EDE and ARSOE and to assist them, Institut de l'Élevage.

Government runs the NIDB which records data transmitted either by the OSB or directly by abattoirs.

Ear tags are approved by the government according tests designed and performed by the OSB through Institut de l'Élevage and EDE.

The French organisation consists of three parts: farm identification, animal identification and cattle traceability. Each one is relatively independent from although farm identification was required for animal identification and traceability. Their scope is also different according to the species: identification of all farmers with pigs, cattle, goats, poultry, and sheep; identification of all cattle, sheep and goats; traceability of all bovines and a part of sheep.

The BSE crisis in 1996

Legal frame work and organisation

Implementation

**Farm
identification:
Objectives**

The objective is to get a permanent unique identification number for holdings where cattle, sheep, goats and pigs are kept by farmers, traders, abattoirs and markets.

Implementation

Keeper of a holding has to ask the OSB through an EDE to give an identification number which is standardised and unique at the EU level. For France, the holding identification number consists of a two letter code for the country, 'FR' for France, and an eight digit code unique within France. Holding identification numbers, addresses, names and addresses of keepers are recorded by the OSB information system which delivers them to other OSB activities and sends them to the NIDB.

Scope

About 300 000 farms, 5 000 traders, 300 abattoirs and 100 markets are recorded.

Identification number, established thirty years ago, is now a widely used reference for many activities: cattle traceability, veterinary concerns, premium calculation, parentage keeping, performance recording, genetic evaluations, herd book keeping...

**Animal
identification:
Objectives**

The objective is to put a unique life time number on all cattle, sheep and goats. Keeper is responsible for animal identification. At the moment, plastic ear tags are the only legal means of identification.

Implementation

To get ear tags, breeders send an order to the OSB through an EDE. EDE checks whether ear tags can be delivered, decides what numbers will be printed on the ear tags, taking into account the already used identification numbers and passes on order by electronic data transfer to a manufacturer. The manufacturer sends the ear tags to the breeder. Orders as well as deliveries are recorded by EDE and passed on to the NIDB. For cattle when an ear tag is missing a new one with the same identification number has to be put by the keeper.

Scope

In France 23 000000 bovines, 1 200000 goats and 9 000000 sheep are identified.

This system deals only with cattle. The objective is to trace the holdings where a bovine, without delay, was reared from birth to slaughter in order to meet the needs for beef labelling, food safety, food quality, veterinary concerns as well as premium checks. This system is operational for all the EU.

Cattle traceability: Objectives

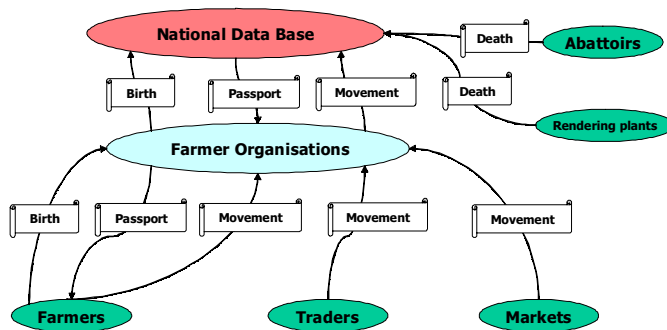


Figure 1 - Organisation and data flow for cattle traceability.

Within seven days from the birth, the keeper puts two ear tags on a calf and sends information to OSB, through an EDE, either by internet or by mail. The information consists of an animal identification number, the holding identification number, a sex code, a breed code and the birth date.

Implementation at birth

EDE checks the data, passes them to the NIDB by electronic data transfer and stores the data in the OSB information system available to the other OSB activities.

If a breeder has decided to do parentage recording, complementary checks are performed in relation with dates of artificial insemination or natural services.

About 8 000000 births were recorded in France in 2003 as well as 3 000 000 parentages.

Within a few days, the NIDB elaborates the passport of the animal which is transmitted to the breeder through an EDE. It is illegal to move or to slaughter an animal which has not at least two ear tags and one passport. Breaking the rules, keepers may incur important penalties.

When an animal enters or leaves a holding, any keeper has to fill in the passport and to send information to the OSB through an EDE. Information consists of animal identification, holding identification, the date of arrival or departure. The data are recorded by the OSB information system. In 2003 about 40 000 000 movements were recorded.

Implementation for animal movements

Implementation at slaughter

Abattoirs as well as rendering plants must send animal identification numbers and dates of slaughter directly to the NIDB. In 2003, 6 000 000 slaughters were recorded.

Economic aspects: Cattle identification and traceability

Ninety-five percent of the OSB costs are paid by the industry of which 90% are breeders. The cost is about 7 Euros per year/calf consisting of 25% for ear tag manufacturing, delivery and replacement, 25% for the information system, 25% for the passport and 25% for the assistance and management. One hundred percent of the costs of NDIB are covered by the government.

Sheep and goat identification

Ninety-five percent of OSB costs are paid by the industry of which 90% are breeders. The cost is about 0.3 Euros per year and per ewe or per goat consisting in $\frac{3}{4}$ for ear tags and $\frac{1}{4}$ for assistance and management.

Future developments

Traceability cost is rather high and it requires much administrative work. Several projects have been launched in order either to reduce the costs or to increase the value of the services. They deal with the use of electronic identification, the increase of electronic data transfer, and quality management according to the ISO standards. The sheep and goat identification will be renewed in 2005 following recent changes in the EU regulations.

Main conclusions: Identification

Following the BSE crisis, now fifteen national organisations are operating full cattle traceability in the EU. Several important issues can be drawn from the French experience as well as from the other European systems. Efficient animal identification can be performed by partners, such as farms, commercial companies or a public administrations, for their particular needs. Manufacturers could provide reliable ear tags and software without any government implication. If more private or public activities need animal identification, and if data needs for exchange increase, an appropriate solution consists of a shared identification system meeting the different needs. This solution is rather low cost and can be appropriate even if a low percentage of animal and few organisations are involved.

Traceability

Identification and traceability are two different things. Animal traceability requires a reliable shared identification system for all the animals. Births, movements from one holding to another and slaughters should be recorded without delay by an information system able to deliver them to the industry and to the government. The result in traceability cost is almost twice the identification cost. Furthermore the cost is independent from the individual animal value: costs per animal are almost the same

for cattle and sheep. Consequently traceability is relevant only if animal value allows it and if market conditions require it. In the EU, following the BSE crisis, the cost of traceability was the price to keep a significant beef market.

A shared animal identification and/or traceability requires government and industry involvement. The government in cooperation with the industry should at least define the common standards for animal and holding identification as well as establish a specialised organisation to operate the system and to finance it at starting. Such organisation should be managed and financed by the industry under government supervision to trust the system and the services meets the public needs at a reasonable cost. This organisation should have expertise in animal identification and/or traceability, in information system engineering as well as in project management to be able to address the critical issues which are the organisation of holding and animal numbering, ear tag delivery and information system implementation.

Organisation requirements and critical issues

Implementation of shared identification and/or traceability requires much money and time. Two or three years are required to set up an operational service. This time is necessary for the organisation, design, and implementation, to gain the user's trust and to involve them by communication and education.

Delay and cost
