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Electronic Identification of Cattle

Ideas from Canada

The development of electronic animal identification for cattle has been completed from a technical perspective. The lawmakers, particularly the EU, are open-minded about introducing electronic animal identification. However, no EU-country makes electronic animal identification mandatory. Outside the EU electronic animal identification is already being applied to effectively guarantee traceability in cattle husbandry. Canada can be used as an example of how this is realizable and could also be a stimulus for the European implementation of electronic animal identification.

In Europe, and especially in Germany, the introduction of an electronic animal identification system has been discussed for a long time. Large projects within the framework of EU support, such as the IDEA project, have been completed for several years, and clear preferences to use this technology (electronic ear tags) have already been voiced. Despite all large projects and a large number of smaller projects and studies, up until now no EU member country has introduced obligatory electronic identification of cattle. For sheep and goats, a binding deadline has been set for January 1st, 2008, but it is not yet clear whether this will hold. While Europe discusses the possibilities, other countries, namely Australia and Canada, have introduced electronic animal identification. The Canadian program for animal identification started in January 2001 with visible ear tags for all animals that left their herd of origin for slaughtering or sale. A change to electronic animal identification (EAI) has been in process since Sept. 1st, 2006 for all animals leaving their herds of origin (sale, slaughter, but also change to collective pastures, exhibitions). The cattle must have an accredited electronic ear tag in their left ear and visual ear tag in the right ear before they leave the herd of origin. Bar codes on old ear tags will only be accepted until December 31st, 2007.

The birth registration for animals born at pasture can be carried out up to five months after the birth of the animal. The ear tags are ordered by the farmers from authorized distributors (e.g., ear tag manufacturers). The distributors are legally obligated to register the quantity of and numbers on the ear tags within 24 hours in the central database. The organization of animal identification and the central database is conducted by the Canadian Cattle Identification Agency (CCIA), which is jointly operated by farmers and processing companies in Canada. The monitoring of the national animal iden-

Fig. 1: Dairy cow with electronic ear tag and visual tag representing the official identification of cattle in Québec/Canada



tification program and the traceability in the case of epidemic rests with the Canadian Food Inspection Agency, which is also responsible for the further development of the program.

Traceability in Quebec

The electronic animal identification in the province Quebec differs in some points from the national program. The documented data and the documentation of animal movement are more detailed and allow good traceability in the case of an epidemic.

The Ministry of Agriculture, Fisheries and Food in Quebec (MAPAQ) and the Association of Agricultural Producers in Quebec (UPA) decided in September 2001 to start a common organization to conduct all tasks related to the traceability of agricultural products: the Agri-Traceability Quebec inc. (ATQ). The ATQ first built the necessary infrastructure in the form of computer net-

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works and databases and made the information about the introduction of electronic animal identification available in professional journals. In June 2002, about 1.1 million



electronic ear tags were registered and thus the complete cattle population registered in the ATQ database (*Tab. 1*). Within the first year large losses occurred with the cattle ear tags, so that a study was carried out in about 100 dairy cattle farms in 2002 to find the cause for this. The results of this study were published in 2003. Due to the results of this study, a new ear tag system was launched in January 2004. These offered the possibility to write farm specific numbers on it (herd management). Besides this, the reverse of the fastening of the electronic ear tag, which previously comprised a simple button, was replaced by a visual ear tag. The electronic ear tag is fastened to the right ear, the visual identification with a plastic ear tag is used on the left ear of the animal (*Fig. 1*).

Costs of Electronic Identification

The actual costs for the identification of an animal with an electronic and visual ear tag

are about € 2.30 €. The costs are, however, now split between the fattening and rearing farms and the calf producers so that the animal keepers must only pay about € 1.50 for an individual animal identification set. The calves must be registered by the seventh day of life. Exceptions are only when the animals are at pasture, then a period of up to five months is allowed, just as in the rest of Canada.

Data management

No accompanying documents (animal passports) are required in Quebec, because traceability is ensured at any time through the electronic animal identification. A print out of the passes and proof of age, which is then confirmed by a veterinarian, is possible at any time via internet. The central ATQ database is only for set up for the province Quebec. This is because in Quebec stricter requirements exist than those of the Canadian central government. The ATQ database is a multi-species database which stores information on the ear tags, birth dates, races, origin, farm number, type of farm, farm address and geographic coordinates as well as the weight at the time of sale or slaughter.

Marketing

A registration (of animal movement) is also undertaken at auction, animal markets and conventions and exhibitions of cattle. The electronic ear tags are used in the course of auctions for quick identification and for the weighing of the animals. Documented animal weights are also stored in the central ATQ database.

Slaughterhouses and animal transports

In the slaughterhouse, the electronic identification ear marks are used to identify the delivered animals and in the course of the slaughtering to identify the carcass. In the

cutting up of the animals the animal number and farm of origin are saved on the label.

To complete the traceability, a pilot project was launched in Quebec in 2006 for animal transports. On the basis of the results, in the summer of 2007, all animal transporters in Quebec were obligated to electronically register the transport of animals (cattle and sheep). For this purpose the system uses GPS and GSM-modules to monitor the course of transport. The traces of the animals are electronically documented and registered in the central database.

The electronic identification of the cattle includes, with the conclusions of the pilot project in transportation, all necessary information from the farmer through to the retail sale. Together with the detailed information stored in the central database and the quick traceability in the case of an epidemic, animal identification is exemplary in Quebec, both within Canada and beyond the country's borders.

Conclusions

The agricultural structure (farm size and husbandry practices) for cattle in the province of Quebec are about the same as in Austria or Bavaria. The extent and structure of cattle keeping farms can be understood on the basis of data in the electronic identification system (*Table 1*). In the area of dairy cattle husbandry, the majority of cows are kept in tie stall barns, the herd size is between 30 and 50 animals. In the following, some special aspects of the ATQ system are shown, which could also be of significance for the introduction of an electronic animal identification system in Germany:

- the price for the electronic identification ear tags is so low because similar organizations, including fattening and breeding farms, participate in the financing of the electronic identification system. This mixed calculation for electronic identification ear tags could be implemented in Germany in a similar way.
- the staggered process (first the producers, then the markets and slaughterhouses, and finally the transport sector) seems to be advantageous for the introduction of the electronic identification system.
- The integration of the producers into the designing and implementation (ear tags) of the electronic identification system is helpful within the framework of projects and studies.
- The traceability strived for in Europe and Germany is already being practiced in Quebec and can serve as an example in its entirety.

Table 1: Producers (including processing industry) and number of cattle with active EID in Québec 2002 (according to data of ATQ, 2006)

number of sold ear tags	1878653
number of active ear tags	902236
number of farmers	17252
number of farms	21544
number of haulage firms	275
traders and processing industry (slaughterhouses, markets, fairs etc.)	292