



BRIEFING

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National Animal Identification Systems: Options for the United States and Implications for Montana

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Many developed countries have become increasingly interested in, and insistent upon, identifying sources of foods that households consume. The ostensible reason is to improve food safety and prevent the spread of animal diseases. Zoonotic diseases (diseases that can be spread from animals to humans) such as Bovine Spongiform Encephalopathy (mad cow disease) and brucellosis (called undulant fever in humans) are major concerns. Other diseases such as Foot and Mouth that can be spread among animals and across animal species are also of considerable concern to both regulatory agencies and agricultural producers even though they pose no threat to human health. Diseases that result from inappropriate processing and food handling also matter (for example, salmonella and *E. coli*).

As a result, regulators and consumer organizations in countries ranging from France to Japan now want to know where animals have been from birth through slaughter. They want to trace meat products from retail outlets to slaughtering plants and farms on which animals are born and raised. And, they want similar information for both imported and domestic animal products. Most of the countries to which the U.S. exports animal

products already have domestic animal identification systems (AIS). Hence, agricultural organizations, consumer groups, and government agencies in the U.S. have become more involved in these issues. In response, the Bush and Obama Administrations have successively become more concerned about the need for a national animal identification system in the United States.

Types of Animal Identification Systems

In 2002, the National Institute for Animal Agriculture gathered representatives from more than 30 different livestock organizations and developed the National Identification Work Plan. The Plan served as a guideline for establishing a U.S. animal identification system. The USDA's Animal and Plant Health Inspection Service (APHIS) then created the National Identification Development team which was comprised of approximately 100 animal and livestock industry professionals. The outcome of this effort was an animal identification plan, later known as the U.S. Animal Identification Plan. The discoveries of BSE infected cattle in Canada and the U.S. heightened interest in a U.S. animal identification system.

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Subsequently, the animal identification plan has been further developed and renamed the National Animal Identification System (NAIS). Species that are the focus of national animal identification programs include cattle, poultry, hogs, horses, sheep and lambs, and goats.

Montana producers are primarily concerned with how NAIS may affect cattle production, although sheep, hog and poultry producers remain keenly interested as well. Three types of NAIS identification processes have recently been evaluated by a recently published USDA-funded study. In order of increasing complexity, they are

1. *Premises Registration*: A “first step” system that provides little information other than a list of the geographic locations of producers of each species. Many producers in Montana have already registered the premises used for their livestock operations with USDA on a voluntary basis. The per-animal out-of-pocket cost of this system is modest.
2. *Bookend System*: This system identifies the animal (or in the case of hogs, poultry and sheep, a group or *batch* of animals) at place of birth and place of slaughter. For beef and dairy cattle, this system typically uses ear tags that are attached to the animal within a short period after birth. Important issues that affect the cost of the program are the types of tags or implant used, and whether animals should be single- or double-tagged. For example, double-tagging increases the reliability

of animal identification, but NAIS but also increases its costs to producers. The recent USDA study estimated that the average cost of a bookend system to farmers and ranchers would be \$3.92 per animal for beef cattle and somewhat less for dairy cows. Per animal costs for individual operations would vary and depend on the size of the operation’s livestock enterprise.

3. *Full tracing or traceability*: This system records places of birth and slaughter (the information provided by the bookend system) but also records animal movements through their lifetimes as ownership changes. This system provides more information but is also more expensive. In the European Union, for example, every beef and dairy animal and every horse has its own passport in which all movements must be recorded on a “real time” basis. Information on animal movements must be provided to the NAIS central data management system in a timely manner. The USDA study estimated that a full tracing system would cost farmers and ranchers an estimated average of \$4.22 per animal for beef cattle.

Issues Associated With Animal Identification Systems

Animal identification systems (AIS) involve costs. Where AIS involve more than premises registration, direct costs are incurred at several stages in the production/marketing chain, including on the farm or ranch, during backgrounding, and at auctions, feedlots, and packing plants. One important issue is the total amount and distribution of those costs

throughout the production/marketing chain. Table 1 presents the estimates of these cost for beef cattle reported in the recent USDA study for bookend and full tracing animal identification systems. Average costs for a beef cow that passes through all five production stages (on ranches, backgrounding, feedlot, auction market and beef packing) are estimated to total \$4.45 for a bookend system and \$5.77 for a full tracing system. In both systems, the majority of these costs are incurred by ranchers (\$3.92 or 88.1% of total costs for the bookend system and \$4.22 or 73.1% of total costs for the full tracing system).

A second concern for many producers is the manner in which animal identification data will be managed, secured, accessed, and funded. A national animal identification system requires a national data base. Different countries have chosen different approaches, but all involve control over access to data by government agencies. In the United Kingdom (UK), for example, the Department for Environment, Food and Rural Affairs (the UK government department that is an analog of USDA) maintains the Cattle Tracing System (CTS) through its agency, the British Cattle Movement Service. The CTS is a computer-based system used to register cattle and horses that allows for the tracking of each animal in Great Britain. The system cost about \$60 million to establish. That cost along with continuing operational costs are government-funded. Access to cattle movement data in the UK is restricted with the intent that no third party (that is, parties other

government agency and the farmer or rancher) will have access to individual ranch records.¹ It seems likely that a similar approach would be adopted in the United States.

A third issue is whether a national animal identification system can function on a voluntary basis rather than as a mandatory program. Two major reasons for establishing an animal identification system in the United States are to recover complete access to key export markets in countries like Japan and South Korea and to increase the likelihood that U.S. beef producers can acquire unfettered access to European Union markets. EU countries have clearly indicated that they are reluctant to accept beef products from countries with voluntary, rather than mandatory, animal identification systems. To be effective in this respect, therefore, it seems likely that a U.S. animal identification system will need to be mandatory.

Given that costs are associated with NAIS, a fourth issue concerns the potential benefits. One is better animal health. To the extent that an NAIS improves the speed of identifying potentially pandemic diseases and preventing their spread, animal health will be improved. In addition, by reducing the incidence of animal diseases, NAIS will also

lower the costs to the cattle industry of those diseases both in terms of reduced mortality and morbidity, and lower expenditures on animal health services and products.

Another important potential benefit is increased access to export markets such as Japan and South Korea. Improved food safety assurance associated with NAIS may also increase domestic beef demand and facilitate the packing industry's compliance with Mandatory Country of Origin Labeling requirements. NAIS could also encourage product branding, improve cattle production efficiency by providing improved information about animal performance, and enhance ownership verification.

Consequently, the major issue is whether the benefits of NAIS are likely to exceed its costs. The recent USDA study estimated that if NAIS only resulted in the recovery of access to Asian markets for U.S. beef producers (with no other benefits in terms of reduced disease incidence, increased domestic demand, etc.), then cattle prices would increase enough to offset the costs of a the full-tracing NAIS program. Likewise, if NAIS resulted only in 1.0% increase in domestic beef demand, then cattle prices would increase sufficiently to offset the costs of NAIS.

Summary

Many developed countries have established national animal identification systems for livestock ranging from cattle to horses to deer and are reluctant to import livestock and livestock products from countries that do not have such systems in place. Potential benefits of a U.S. NAIS include improved access to export markets, reductions in disease incidence and disease cost mitigation, increased food safety assurance, and improved human health. However, an NAIS would also increase producer costs because of the need for animal ear tagging, electronic implants, reading equipment, data recording, and increased administration, record keeping and paperwork. Such costs are not negligible (estimated to be about \$4.22 per animal in the beef sector). However, NAIS costs are relatively small compared to the market value of beef animals. A recent USDA-funded study has estimated that if NAIS resulted either in the recovery of Asian export markets or a 1 percent increase in domestic demand, then domestic prices would increase sufficiently to offset the costs of NAIS.

¹ To address U.K. producer concerns about whether the animal identification information they provide to DECRA will remain confidential, DEFRA includes the following statement on its animal identification home page:

Defra (or the National Assembly for Wales) and Local Authorities are the data controllers (in common) in respect of any personal data that you provide when you complete the movement documents. Data controllers in common are two or more data controllers processing the same data but for different purposes. Defra (or the National Assembly for Wales) and Local Authorities will use the information on the movement documents for the purposes of recording livestock movements and the enforcement of disease control legislation, which will include, but not be confined to, breaches of standstill rules, multiple-pick-up/drop-off rules, identification requirements and illegal movements of livestock. We may also use the data on the movement documents to produce statistical returns/analyses of movements and the results may be made public but they will not identify individuals. Data may also be provided to Universities or other institutions or persons involved with research or projects for Defra (or the National Assembly for Wales). However, we will only provide data to organizations which sign a confidentiality agreement that no material will be published that would enable persons to be identified from the information. Defra may be required to release information, including personal data and commercial information, on request under the [UK] Environmental Information Regulations 2004 or the [UK] Freedom of Information Act 2000. However, Defra will not permit any unwarranted breach of confidentiality nor will we act in contravention of our obligations under the Data Protection Act 1998

Table 1: Animal Identification System Estimated Average Costs per Animal by Stage of Production for Beef Cows

Animal\Stage of production	Identification System (estimated cost per animal)	
	Bookend	Full Tracing
On the ranch	\$3.92	\$4.22
Backgrounding	\$0.23	\$0.71
Feedlot	\$0.20	\$0.51
Auction Markets	\$0.00	\$0.23
Beef Packers	\$0.10	\$0.10
Total (Beef)	\$4.45	\$5.77