

An hourglass-shaped graphic with a globe in the top bulb and another globe in the bottom bulb. The hourglass is light blue and has a dark blue cap at the top. The globe in the top bulb is dark blue, and the globe in the bottom bulb is light blue. The text is centered within the hourglass.

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Report RL32012

Animal Identification and Meat Traceability

Geoffrey S. Becker, Resources, Science, and Industry Division

January 18, 2007

Abstract. This report focuses on animal identification and meat traceability. However, traceability, and the somewhat different but related concepts of identity preservation and product segregation, also pertain to other agricultural products, such as grains, and issues, such as genetically modified crops; the labeling of GM foods; and the production and labeling of organic foods.

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CRS Report for Congress

Animal Identification and Meat Traceability

Updated January 18, 2007

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Prepared for Members and
Committees of Congress

Animal Identification and Meat Traceability

Summary

Many animal producers support establishment of a nationwide identification (ID) system capable of quickly tracking animals from birth to slaughter. While they believe such a system is needed to better deal with animal diseases or meet foreign market specifications, some consumer groups and others believe it also would be useful for food safety or retail informational purposes — and that the program should be able to trace meat products through processing and consumption.

However, despite years of effort on at least an animal ID program for disease purposes, many contentious issues remain unresolved. For example, should it be mandatory or voluntary? What types of information should be collected, on what animal species, and who should hold it, government or private entities? How much will it cost, and who should pay?

Following the first U.S. report of a cow with BSE (bovine spongiform encephalopathy or “mad cow disease”) in late December 2003, the Secretary of Agriculture promised to take the lead in implementing an animal ID program capable of identifying all animals of interest within 48 hours of a disease discovery (BSE or other). The U.S. Department of Agriculture (USDA) has committed, through FY2006, \$85 million to this effort, and all states now have systems for registering animal premises.

Some industry groups and lawmakers have criticized USDA for moving too slowly and/or not providing a clearer path toward a universal ID program. Others believe that USDA’s progress to date simply reflects the deep divisions among producers and other interests over the many unresolved questions. A few livestock producers oppose any effort to establish broader programs, fearing they will be costly and intrusive.

The 109th Congress was asked to address these issues. A provision in the House-passed USDA appropriation for FY2007 (H.R. 5384) would have conditioned another \$33 million in spending for animal ID on publication in the *Federal Register* of a “complete and detailed plan” for the program, “including, but not limited to, proposed legislative changes, cost estimates, and means of program evaluation.” However, a House floor amendment to prohibit all ID program funding was defeated by a wide margin. A final FY2007 appropriation had not been passed by mid-January 2007, and USDA programs were operating under a continuing resolution.

Other bills included H.R. 1254, the National Farm Animal Identification and Records Act, H.R. 1256, to limit animal ID information disclosure, and H.R. 3170, creating a private Livestock Identification Board to oversee the program. The continuing differences over animal ID make it more likely that the topic will be part of the 2007 debate over a new omnibus farm bill. This CRS report will be updated if events warrant.

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Animal Identification and Meat Traceability

Overview

U.S. animal agriculture wants to improve its ability to trace the movement of livestock from their birthplace to slaughter. Some advocates also want such traceability to reach all the way to the final consumer. Is a national system needed? Should it be mandatory? What would it cost, and who pays?

The livestock and meat industries have discussed these questions for some time, and an industry-government working group was developing a national animal identification (ID) plan for livestock disease tracking purposes. The group stated that the health of U.S. herds was “the most urgent issue” and “the most significant focus” of its proposed plan.¹

National interest intensified in the wake of such developments as the discovery in 2003 of bovine spongiform encephalopathy (BSE or “mad cow disease”) in North America, and ongoing concerns about bioterrorism. Debate over a law requiring retail country-of-origin labeling (COOL) for meats and other products also has fueled interest in increased animal ID capabilities (but was not a focus of the industry-government working group). In 2007, the need for, and design of, an animal ID program will be a topic during debate on a new omnibus farm bill.

This report covers animal ID and, to a lesser extent, meat traceability. However, traceability, and the somewhat different but related concepts of “identity preservation” and “product segregation,” also pertain to other agricultural products (e.g., grains) and issues (e.g., genetically modified, or GM, crops; the labeling of GM foods; and the production and labeling of organic foods). Several sources cited below, including the U.S. Department of Agriculture’s (USDA’s) Economic Research Service (ERS) and *Choices* articles (see footnote 1) and a 2002 Sparks study (see footnote 5), cover traceability in more breadth.

What Are Animal Identification and Meat Traceability?

Animal ID refers to the marking of individual farm animals, or a group or lot of animals, so that they can be tracked from place of birth to slaughter. Many producers already know, and keep records on, the identities of each animal. In addition, many animals have been identified as part of official disease eradication or

¹ National Identification Development Team, *U.S. Animal Identification Plan*, December 23, 2003, p. 2. Other sources for this section include USDA Economic Research Service (ERS), “Traceability for Food Marketing & Food Safety: What’s the Next Step?” in the January-February 2002 *Agricultural Outlook*; Elise Golan and others, “Traceability in the U.S. Food Supply: Dead End or Superhighway?” in the June 2003 *Choices* magazine; and interviews with various USDA and animal industry officials.

control programs. However, no nationwide U.S. marking system, backed by universal numbering and a central data registry, is in place yet.

Animal ID is one component of *meat traceability*. Traceability is the more comprehensive concept of tracking the movement of identifiable products through the marketing chain. An extensive form of meat traceability is the ability to follow products forward from their source animal (i.e., birth or ancestry), through growth and feeding, slaughter, processing, and distribution, to the point of sale or consumption (or backward from the consumer to the source animal). Traceability can be used to convey information about a product, such as what it contains, how it was produced, and every place it has been.

Animal ID and meat traceability are not themselves food safety, animal disease prevention, quality assurance, or country-of-origin labeling programs. However, they may be important components of such programs.

Reasons for Animal Identification and Meat Traceability

Commercial Production and Marketing Functions. Animal producers and food suppliers already have at least some capacity for tracing products. Many farmers and ranchers keep track of individual animals and how they are being raised. Traceability can help them to identify and exploit desirable production characteristics, such as animals that can grow more rapidly on less feed or that yield a better cut of meat. Universal bar codes on processed food, including many meats, are widely used for tracking. Traceability helps to coordinate shipments, manage inventories, and monitor consumer behavior. Some consumers prefer meat (or eggs or milk) from animals raised according to specified organic, humane treatment, or environmental standards. Traceability can help firms to separate, and keep records on, these unique products to verify production methods. However, in the commercial market, producers benefit (and will provide such products) only to the extent that demand exists.

Animal Health. Animal ID can help to track down more quickly the source of diseases in U.S. herds (or flocks) in order to determine their origin and cause, eradicate them, and prevent their spread. In the growing global marketplace, surveillance and containment, aided by a traceability system, can both reassure foreign buyers about the health of U.S. animals and help to satisfy other countries' sanitary and phytosanitary (SPS) import requirements. When used in animal health programs, ID and tracing systems are likely to have both commercial and regulatory dimensions. USDA's Animal and Plant Health Inspection Service (APHIS) is the lead federal agency charged with protecting U.S. animal populations from diseases and pests. APHIS works cooperatively with foreign and state animal health authorities and with the private sector in such efforts.

Food Safety. USDA's Food Safety and Inspection Service (FSIS) is responsible for protecting the public against unsafe meat and poultry. The Food and Drug Administration (FDA) oversees the safety of all other foods and also regulates animal feeds. Both collaborate with APHIS and other federal and state agencies to protect the food supply from the introduction, through animals, of threats to human health, such as tuberculosis; the four major bacterial foodborne illnesses,

Campylobacter, *Salmonella*, *Listeria*, and *E. coli* O157:H7; and the human form of BSE, a very rare but fatal one known as variant Creutzfeldt-Jakob Disease (vCJD). Generally, when local health officials can link an illness to a particular product, firms and their regulators have been able to trace that product back to the processor and/or slaughter facility. It is more difficult and costly, though technically feasible, to determine which particular animals, herds, or flocks were the source of the problem. A rigorous traceback and animal ID system would not prevent safety problems (process controls, testing, and other science-based food safety regimes are intended to do that), but it could facilitate recalls, possibly contain the spread of an illness, and help authorities stem future incidents, according to some analysts. Besides building public confidence in the U.S. food safety system, improved traceability may enable firms to limit their legal and financial liabilities, it has been argued. Thus food safety also has both commercial and regulatory dimensions.²

Country-of-Origin Labeling. Section 10816 of the 2002 farm bill (P.L. 107-171) requires many retailers to provide country-of-origin information on a number of raw products, including fresh and ground beef, pork, and lamb (produce, seafood, and peanuts also are covered). USDA was to implement the requirement by September 30, 2004; until then COOL was voluntary. However, the consolidated FY2004 omnibus appropriation (P.L. 108-199) postponed mandatory COOL for two years for all covered commodities, except farmed fish and wild fish, to September 30, 2006. Congress postponed it again, until September 30, 2008, in the FY2006 agriculture appropriation (P.L. 109-97).

Once the 2002 COOL law is implemented, meats labeled as U.S. origin would have to come from animals that are born, raised, and slaughtered in the United States. The COOL law prohibits USDA from establishing a mandatory ID system to verify country of origin, but it does permit USDA to require persons supplying covered commodities to maintain a “verifiable audit trail” to document compliance. Some analysts have concluded, therefore, that COOL could spur efforts to trace red meats back to their birth animals. (Poultry is not covered by the COOL law.)³

Existing U.S. Programs

Animal ID dates back at least to the 1800s, when hot iron brands were used throughout the West to indicate ownership. The methods of (and reasons for) identifying and tracking animals and their products have evolved since then and, as noted, are employed for both commercial and regulatory purposes.

Animal Health. By the mid-1900s, APHIS and its predecessor agencies were using tags, tattoos and brands more widely, mainly to identify, track, and remove animals affected by disease outbreaks. Current ID methods include ear, back, and tail tags; neck chains, freeze brands, and leg bands. Some producers use radio frequency

² See CRS Report RL32922, *Meat and Poultry Inspection: Background and Selected Issues*, by Geoffrey S. Becker; and CRS Report RL32199, *Bovine Spongiform Encephalopathy (BSE, or “Mad Cow Disease”): Current and Proposed Safeguards*, by Sarah A. Lister and Geoffrey S. Becker.

³ See CRS Report 97-508, *Country-of-Origin Labeling for Foods*, by Geoffrey S. Becker.

ID (RFID) transponders with information that is read by scanners and fed into computer databases. For interstate swine movements, mandatory ID requirements have been in place since 1988 for disease control purposes. Most hogs are tracked by group, not individually, and most slaughter plants can identify the owners of the animals under this system. Sheep moved across state lines also are required to be identified.

Brucellosis is a highly contagious and costly disease mainly affecting cattle, bison, and swine. Once it was common in the United States, and uniquely numbered brucellosis ID tags were routinely found on animals, with information that they had been vaccinated and/or tested. Today brucellosis has largely been eradicated in commercial U.S. herds. APHIS also has eradication or control programs for tuberculosis, scrapie in sheep, pseudorabies in swine, Texas fever and scabies in cattle, and several poultry diseases, including Exotic Newcastle Disease (END). In each of these programs, APHIS has established rules and procedures to identify and track animals, herds, or flocks back to their origin, if necessary.

Marketing. Government-coordinated programs have been established for other purposes besides animal health. For example, a voluntary process verification program operated by USDA's Agricultural Marketing Service (AMS) "provides livestock and meat producers an opportunity to assure customers of their ability to provide consistent quality products by having their written manufacturing processes confirmed through independent, third party audits," according to AMS. USDA Process Verified suppliers can have marketing claims such as breeds, feeding practices, or other claims verified by USDA and marketed as "USDA Process Verified." Other programs employing varying levels and types of traceability include the domestic origin requirement of all suppliers of USDA-purchased commodities and products used in such programs as school lunch and food distribution to needy families and institutions, and the national organic certification program.⁴

Need for Improved ID Capabilities

Together, the above activities might be viewed as a national ID system, but there are significant gaps. Generally, as disease programs succeed, fewer animals receive tags. The animal ID working group reported that fewer than 4 million U.S. calves (about 10% of the total) were being vaccinated for brucellosis and tagged (only female calves are vaccinated). Also, existing ID programs may provide only limited information — for example, not all of an animal's movements between the farm and slaughterhouse may be documented.⁵ None of the programs were set up to denote place of birth, analysts say.

Although U.S. regulators and producers usually can locate where a product was processed or the movements of many farm animals, it can be tedious and time-consuming, taking weeks or months in some situations. That's because the different

⁴ For more information, see the AMS website at [<http://www.ams.usda.gov/>].

⁵ *National Identification Work Plan* (November 2002 version). Also see Sparks Companies, Inc., *Linking the Food Chain: Sharing Information and Verifying Sources, Materials, and Processes Across Traditional Boundaries*, November 2002 multi-client study.

animal ID and traceability systems now in place have been implemented independently of each other, may be “paper trails” which take time to follow, have divergent and sometimes conflicting purposes, and collect disparate types of information, according to industry experts.

The limitations of existing animal ID were tested after several U.S. cases of BSE emerged. The first case, in December 2003, was a Holstein dairy cow with a metal ear tag containing an identifying number. That helped authorities to more quickly trace its likely movements and origin, to a herd in Alberta, Canada. Dairy farmers often have more extensive information about individual animals for milk production, breeding, feeding, and related purposes.

However, six weeks later, U.S. authorities announced that they had ended their BSE field investigation after identifying only 28 of 80 cows that had entered the United States from Canada with the BSE cow. An international expert panel, asked by USDA asked to review its handling of this first U.S. BSE case, warned that USDA’s failure to find every animal “is a problem faced by all countries which do not have an effective animal traceability system.” It encouraged “the implementation of a national identification system that is appropriate to North American farming.”⁶

Announcing the end of an investigation into the second U.S. BSE case (in a Texas-born cow that died in November 2004), Secretary Johanns again lamented the lack of a national ID system: the investigation “would have taken far less than two months” if a system were in place, a significant matter “because a number of trading partners have been reluctant to make decisions until the investigation is complete.”⁷ Investigators also were unable to trace back earlier locations and herdmates of a third BSE case, an Alabama beef cow found in February 2006, at a time of delicate market-reopening discussions with both the Japanese and Koreans.

Development of a National Plan

Work toward a coordinated national animal ID system began in earnest in the early 2000s with the formation of the National Food Animal Identification Task Force, facilitated by the National Institute for Animal Agriculture (NIAA). This evolved into a larger, joint industry-government-professional effort whose principal goal was the ability to trace animals of interest within 48 hours of an animal disease problem.

USDA eventually assumed the lead in planning the system, and has provided funding toward its establishment. Despite — some say because of — USDA’s direction, some livestock producers and their organizations complained that the Department was beset by indecision, progressed much too slowly, and/or had sown

⁶ Secretary’s Foreign Animal and Poultry Disease Advisory Committee’s Subcommittee. *Report on Measures Relating to Bovine Spongiform Encephalopathy (BSE) in the United States*. February 2, 2004. Animal ID was one of a number of its policy recommendations.

⁷ Transcript of August 30, 2005, technical briefing with Agriculture Secretary Mike Johanns and others, accessed at [<http://www.aphis.usda.gov/lpa/issues/bse/bse.html>].

considerable confusion about what type of program was evolving.⁸ On the other hand, USDA's actions may simply have been reflecting the continuing divergence of opinion within animal agriculture itself over the best policy approach. A number of producers also were becoming more vocal about what they viewed as a threat to the privacy of their farm and financial records, particularly out of concern that participation in animal ID could become mandatory.

Early Steps. The NIAA-facilitated work by the National Food Animal Identification Task Force led to a draft plan presented to, and accepted by, the U.S. Animal Health Association (USAHA, representing state veterinarians and allied industry groups) in October 2002. USAHA next asked APHIS to organize a government-industry team (named the National Identification Development Team) to develop a more detailed animal ID system, using the work plan as a guide, including a timetable, for presentation at and approval by the USAHA meeting in October 2003. The task force utilized more than 100 professionals from approximately 70 agencies and organizations, led by an eight-person steering committee.

A "U.S. Animal Identification Plan (USAIP)" published in December 2003 stated in part: "Maintaining the health of the U.S. animal herd is the most urgent issue for the industry and is the focus of the plan." A key goal has been the ability to identify all animals and premises potentially exposed to a foreign animal disease within 48 hours of its discovery. The plan called for recording the movement of individual animals or groups of animals in a central database or in a "seamlessly linked" database infrastructure. APHIS roles would be to allocate premises and animal numbers, and to coordinate data collection, to be used for animal disease purposes only.

The proposed work plan envisioned by USAIP had first called for all states to have a premises identification system by July 2004. Such a system could identify individual animal premises (e.g., farm, feedlot, auction barn, assembly point, processing plant) and provide each with a unique ID number. Among other steps in the plan, all cattle, swine, and small ruminants were to possess individual or group/lot identification for interstate movement by July 2005. All animals of the remaining species/industries were to be in similar compliance by July 2006. USAIP stated that animal ID should be available for "all animals that will benefit from having a system to facilitate rapid traceback/traceout in the event of disease concern."

USDA Takes the Lead. As this last draft USAIP was being published, BSE was discovered in a Washington state cow. Then-Secretary of Agriculture Veneman announced, on December 30, 2003, a series of initiatives aimed at restoring public and foreign confidence in the safety of U.S. beef and cattle. One of these initiatives was to be the accelerated implementation of a verifiable system of national animal identification.

⁸ See for example: *Food Chemical News*, February 13, 2006; *Food Traceability Report*, February 2006; and *Cattle Buyers Weekly*, January 23, 2006, and December 5, 2005.

In April 2004, USDA announced its “framework” for a national system, and then transferred \$18.8 million from its Commodity Credit Corporation account to APHIS to begin implementation. On June 16, 2004, USDA provided nearly \$12 million of the total for cooperative agreements with states and tribal governments, to begin registering premises and to conduct research and data collection.⁹

USDA asked Congress for, and received, approximately \$33 million for its animal ID activities in each of FY2005 and FY2006. Another \$33 million request for FY2007 was pending in late November 2006 (see “Legislation” at the end of this report).

By August 2005, all states had the capability of registering animal premises; by late November 2006, they had registered more than 332,000 premises, out of an estimated 1.4 million sites with livestock and/or poultry, according to USDA.

The Department’s National Animal Identification System (NAIS) “builds upon aspects of the USAIP and is the program that USDA is moving forward with in implementing national animal and premises identification. USDA will continue to seek industry input as the NAIS progresses,” it declared.

USDA’s First Draft Strategic Plan. On May 5, 2005, USDA had released for public comment a draft strategic plan, including timelines, for achieving a nationwide program. For example, the draft had proposed requiring stakeholders to identify premises and animals according to NAIS standards by January 2008, and requiring full recording of defined animal movements by January 2009. USDA stressed, however, that formal rulemaking would precede any mandatory program if it became necessary.

USDA’s Animal ID “Guiding Principles”. With criticism mounting over the pace and direction of USDA’s efforts, officials apparently modified their thinking on a national program. On August 30, 2005, Secretary Johanns announced four “guiding principles” for a national ID system:

- It must be able to allow tracking of animals from point of origin to processing within 48 hours without unnecessary burden to producers and other stakeholders.
- Its architecture must be developed without unduly increasing the size and role of government.
- It must be flexible enough to utilize existing technologies and incorporate new identification technologies as they are developed.

⁹ USDA in fact had been funding animal ID pilot projects for several years. For example, the National Farm Animal Identification and Records (FAIR) Program, administered by the Holstein Association USA, Inc., developed a database identifying animals on thousands of dairy and livestock farms, most of them in Michigan. USDA also was funding ID pilots in Michigan for cattle tuberculosis; in Wisconsin for the Animal Identification and Information System (“A-II”) for all species; and in several other states.

- Animal movement data should be maintained in a private system that can be readily accessed when necessary by state and federal animal health authorities.

This latter point was perhaps the most significant. It appeared to signal USDA's awareness of growing concerns among many producers regarding the collection and use of what they view as their private production information. Subsequently, federal officials revealed that they were now contemplating not a single tracking system, but rather "a metadata repository that USDA would develop and maintain; this potentially will allow us to work with multiple databases collecting information on animal movement."¹⁰ In the event of a disease incident, APHIS would send inquiries only to those databases with relevant information on those particular animals, officials explained.

USDA's April 2006 Implementation Plan.¹¹ On April 6, 2006, Secretary Johanns unveiled a plan outlining what he characterized as an "aggressive timeline for ensuring full implementation of the NAIS by 2009." The timeline included "benchmarks for incrementally accomplishing the remaining implementation goals to enable NAIS to be operational by 2007," the Secretary noted. As he had indicated in the past, the national system would be a series of state or privately held databases that USDA could tap in the event of an animal disease event.

USDA's Current Thinking. In November 2006, USDA distributed a draft "user guide," which, it stated, is "the most current plan for the NAIS and replaces all previously published program documents, including the 2005 Draft Strategic Plan and Draft Program Standards and the 2006 Implementation Strategies."¹² The document seeks to assure producers that USDA will not require them to participate in the program, and that it is bound by law to protect individuals' private and confidential business information. The draft user guide describes three successively greater steps toward full participation, if a producer chooses to do so:

- Premises registration, which can be done through state (or tribal) animal health authorities;
- Animal identification, accomplished by obtaining USDA-recognized numbering tags or devices from representatives of authorized manufacturers;
- Selection of an animal tracking database (ATB) that the producer will use to report animal movements.

¹⁰ Clifford, John R., APHIS Deputy Administrator, Announcement to National Animal Identification System Stakeholders, January 26, 2006. This announcement references an October 16, 2005, stakeholder meeting held in Kansas City, Missouri.

¹¹ The Secretary's comments, and a copy of the plan, *National Animal Identification System (NAIS): Strategies for the Implementation of NAIS*, April 2006, was formerly posted at the APHIS website on animal ID.

¹² APHIS was accepting comments on the draft user guide until January 22, 2007; it was posted at its NAIS website: [<http://animalid.aphis.usda.gov/nais/index.shtml>].

Among other noteworthy aspects of the evolving NAIS, as described by the guide:

- Animal species to be covered will include cattle and bison; poultry; swine; sheep and goats; cervids such as deer and elk; horses and other equines; and camelids (e.g., llamas and alpacas). Household pets and other animals not listed here are excluded from NAIS.
- Animals that typically are moved in groups or lots — such as hogs and poultry — would not have to be individually identified.
- Only animals that enter commerce or that commingle with animals at other premises (like sales barns, state or national fairs or exhibits) would be identified.
- The ATBs will be privately held and managed.
- Producers do not have to pay for premises registration, but they would be responsible for the cost of ID devices.

Status of Premises Registration. As of mid-January 2007, APHIS reported that approximately 348,000 premises with animals had been registered in one of the available databases. This represented nearly a fourth of the estimated 1.4 million livestock and poultry farms in the United States (based on 2002 Census of Agriculture data). Registration rates vary widely among states: in December 2006, for example, Idaho was at more than 95% and Indiana was at more than 70%, while Kansas was at 11% and Texas was at 12%.¹³

Private Sector Plan? The National Cattlemen’s Beef Association (NCBA) in 2005 had announced that it would take the lead on a privately-held ID system that could track cattle and other animal species. The United States Animal Identification Organization (USAIO) formed under NCBA auspices in January 2006. USAIO is “... managing the industry-led animal movement database in accordance with the NAIS and is working with every segment of the animal industry and animal health authorities to provide an effective, efficient, and inexpensive database for the NAIS.”¹⁴ Some Members of the House Agriculture Committee also called on USDA to implement a private sector-based system. Complaining that the department had so far failed to consider a private system, these members noted: “This is unfortunate because experience suggests that private-based systems have allowed other nations to implement ID systems swiftly and inexpensively while still maximizing the benefit to producers and the utility for government regulators.”¹⁵

Not everyone has endorsed the private approach. R-CALF United Stockgrowers of America, representing some cattle producers, issued an August 31, 2005, statement asserting that protecting U.S. animal health has national security and public accountability dimensions that should not be ceded to the private sector.

¹³ Premises registration data is updated regularly on the APHIS animal ID website.

¹⁴ NCBA, [<http://www.beefusa.org/NEWSAnimalIDTalkingPoints25023.aspx>].

¹⁵ July 20, 2005, letter to Secretary Johanns signed by Representative Goodlatte, then Chairman of the House Agriculture Committee, and six other Committee Members.

Other Selected Issues

Mandatory or Voluntary? The original USAIP draft plan did not explicitly call for a mandatory program. The USAIP website had stated in part: “Ultimately there needs to be full compliance for the system to work as effectively as it should.” Until recently, USDA’s approach had been to first work on a voluntary system and then reassess the need for making some or all aspects of it mandatory. However, according to the Department’s latest thinking on the NAIS (see above), “Participation in NAIS is voluntary at the Federal level.... The NAIS does not need to be mandatory to be effective.”

Others, including many state animal health officials, reportedly disagree. At meetings in October 2006, the National Assembly of State Animal Health Officials and the U.S. Animal Health Association’s livestock committee each approved a recommendation that, as a step toward a national system, USDA make animal ID mandatory for all U.S. breeding cattle.¹⁶ The Center for Science in the Public Interest (CSPI), a consumer advocacy group, also has pressed for a mandatory national system and criticized USDA for its “lack of commitment to getting a viable system in place.”¹⁷

Costs and Who Pays. An animal ID system will incur a variety of costs, such as for tags or other identifying devices and their application; data systems to track animals; and any government administrative expenses. To date, cost estimates of a national system have varied broadly — and are not directly comparable. This disparity is a reflection of estimators’ differing assumptions and of the varying designs of the programs being considered.

For example, the earlier USAIP draft estimated that once a national ID program is fully in place, costs might approximate \$122 million annually, with ID tags accounting for nearly \$100 million of that amount. In the earlier years of the plan during the implementation phases, system development costs would be higher, but ID tag expenses lower.¹⁸ These estimates apparently are for the cost of a multi-species plan. Elsewhere, the “National FAIR Fact Sheet” estimates that its cattle program would cost \$540 million over a five-year period. This would include the costs of initial tagging of all newborn bovines and subsequent tagging of animals as movements warrant. The first-year cost would be \$175 million, FAIR also estimated.¹⁹

As the extent of traceability increases, so do likely costs. Animal ID *prior* to slaughter, and product tracking *after* slaughter and processing, generally are available (and are often used), industry observers agree. However, the meat industry essentially has argued, notably in the context of COOL, that linking the two systems will be

¹⁶ “USDA Urged to Move on Mandatory Animal ID,” *Food Traceability Report*, November 2006.

¹⁷ *Food Chemical News*, February 13, 2006.

¹⁸ USAIP, December 23, 2003, table, p. 45.

¹⁹ Communication to CRS, March 30, 2004.

difficult and costly. Industry officials said new costs will be incurred in identifying and segregating animals, physically reconfiguring plants and processing lines, and labeling and tracking the final products.

Several studies have estimated total industry COOL costs for the cattle and beef sectors alone at between \$1-\$3 billion; others have estimates above and below this range.²⁰ One company estimated a minimum investment of \$20-25 million per plant to ensure compliance.²¹ Others challenge these costs; a recent study estimated COOL recordkeeping costs for all covered commodities (produce, seafood, and peanuts as well as meats) at \$70-\$193 million annually — less than one-tenth of a cent per pound based on U.S. consumption.²²

A related policy question is who should pay. Producer groups suggest that government should share costs with industry. Without at least some public support, the burden could be passed to farmers and ranchers in the form of lower prices for their animals, and/or forward to consumers in the form of higher meat prices, they argue, adding that the industry would become less competitive. USAIP observed:

It is well acknowledged that costs associated with the USAIP will be substantial and that a public/private funding plan is justified. Significant state and federal costs will be incurred in overseeing, maintaining, updating, and improving necessary infrastructure. Continued efforts will be required to seek federal and state financial support for this integral component of safeguarding animal health in protecting American animal agriculture.²³

It could be argued, on the other hand, that the need to control federal spending should take precedence over public funding for an animal ID program, and that the industry, a primary beneficiary, should shoulder most if not all of the costs. Certain animal ID bills introduced into the 108th and 109th Congress proposed appropriations for a program; some also proposed financial assistance to producers to help them comply.

USDA's November 2006 draft user guide (see above) calls for shared expenses among the federal government, states, and industry, with producers paying for ID devices themselves. It estimated the cost to be \$1 for each visual ID tag, \$2-\$3 for devices with radio frequency transponders, and \$15-\$20 for electronic ID devices that are injectable (e.g., for horses). USDA did not provide cost estimates for

²⁰ Testimony of Keith Collins, USDA Chief Economist, before the House Agriculture Committee, June 26, 2003.

²¹ Testimony of Ken Bull, Vice President for Cattle Procurement, Excel Corporation, before the House Agriculture Committee, June 26, 2003.

²² VanSickle, J., and others, *Country of Origin Labeling: A Legal and Economic Analysis*, International Agricultural and Trade Policy Center, University of Florida, May 2003. However, the analysis assumed that documentation only of imported products is required by COOL; domestic products would be presumed to be of U.S. origin.

²³ USAIP, December 23, 2003, p. 2. As noted, the Administration requested and received \$33 million to work on animal ID in both FY2005 and FY2006. A request for the same amount in FY2007 was pending in Congress in July 2006.

participating in the tracking databases. It said that these costs could vary depending partly upon whether producers chose to use these privately maintained databases for additional services. (An example might be birth/age/process verification which some buyers might request to back a labeling or marketing claim.)

In Canada, which has far fewer cattle than the United States, the cattle ID program was developed and implemented for less than \$4 million (Canadian dollars), according to an official there. The total annual cost of the program since then has been approximately C\$1 million per year, including database management, communications, and other administrative costs. Producers buy the tags from retailers of farm supplies, veterinarians, and other industry organizations, and pay for their own tagging and recordkeeping. The cost of bar-coded ID tags ranged from C\$0.80 to C\$1.60 each. Canada is now moving to an RFID system, with an estimated cost of approximately C\$2.00 per animal.²⁴

Liability and Confidentiality of Records. Some producers are concerned they will be held liable for contamination or other problems over which they believe they have little control once the animal leaves the farm. On the other hand, documentation of management practices, including animal health programs, can help to protect against liability because they can prove where animals came from and how they were raised.²⁵

Another issue is whether producers can and should be protected from public scrutiny of their records. The federal Freedom of Information Act (FOIA) entitles members of the public to obtain records held by federal agencies. Some producers are concerned, for example, that animal rights extremists might use FOIA to gain information collected by USDA to find and damage animal facilities. However, the law exempts from FOIA access to certain types of business information, such as trade secrets, commercial or financial information, or other confidential material that might harm the private provider of that information.

The evolving ID system would limit government's role to obtaining disease information only. "Animal movement records will be securely held in animal tracking databases owned, managed, and controlled by the private sector or the States," USDA's November 2006 draft user guide states. "Animal health officials will only request animal movement information from these databases when there is a risk to animal health — such as an outbreak of avian influenza, brucellosis, or tuberculosis."

²⁴ Personal communication with Julie Stitt, Canadian Cattle Identification Agency, January 12, 2004. At a September 15, 2005 House Agriculture subcommittee hearing, Ms. Stitt stated that the RFID tags were costing \$2.20 to \$3 (Canadian dollars). House Committee on Agriculture, Subcommittee on Livestock and Horticulture, National Animal Identification Systems, 109th Cong., 1st sess., Serial No. 109-16. Canada had about 16.3 million cattle and calves in July 2006, compared with about 105.7 million in the United States.

²⁵ Clemens and Babcock.

Still, some in the industry worry about government intrusion into their business practices generally. That is why they prefer the use of a private third party, rather than USDA, to collect and maintain animal data (and why others want no new program). Any agreement between USDA and a private entity would have to clearly stipulate the conditions for use of the information, they assert. Several proposed bills have called for more explicitly shielding animal ID data from public scrutiny.²⁶

Industry Structure. How might traceability costs affect the industry's ability to produce an economically competitive product, and which segments could bear most of the costs? It has been argued that, as more tracing requirements are imposed, large retailers and meat packers will exercise market power to shift compliance costs backward to farms and ranches, making it even more difficult for the smaller, independent ones to remain in business. Larger, more vertically integrated operations are more likely to have the resources and scale economies to survive, some have argued. On the other hand, if traceability costs forced big meat plants to reduce line speeds, "... smaller plants with slower fabrication speeds may be better equipped to implement traceability to the retail level and may find niche market opportunities," Clemens and Babcock wrote.

Foreign Trade Concerns. Improved traceability is viewed as important for maintaining foreign market access. According to the November 2002 version of the *National Identification Work Plan*, "Other countries are rapidly developing systems that are already being used as technical barriers to trade. These systems are rapidly becoming the world standard. To avoid the loss of international markets, the United States needs to be consistent with the animal tracking systems of our international trading partners.... As our export potential grows, the need to quickly trace suspected foreign or emerging diseases will be more important than ever."

When Canada in May 2003 discovered BSE in one of its cattle (but before the United States found its own case seven months later), Japanese officials said they would require proof that beef shipped from the United States was not of Canadian origin. Japan had been the United States' number one foreign market, purchasing 36%-37% of all U.S. beef exports in recent years (USDA data). (Japan also has been the top importer of U.S. pork.) This Japanese requirement had complicated U.S. deliberations on whether and when to reopen its own border to Canadian beef and/or cattle and other ruminants.

Hoping to satisfy Japanese demands for verification of origin, the department unveiled in August 2003 a new "Beef Export Verification" (BEV) program as a voluntary, user-fee funded service. Exporters desiring to sell beef to Japan could request certification from AMS.²⁷ However, after the December 23, 2003, USDA announcement of a U.S. BSE cow, Japan was among the many countries suspending imports of U.S. cattle, beef, and related products.

²⁶ For more discussion of the liability and confidentiality issues, see The National Agricultural Law Center, *Animal Identification — An Overview*, A National AgLaw Center Reading Room, at [<http://www.nationalaglawcenter.org/readingrooms/animalid/>].

²⁷ For details, see [<http://www.ams.usda.gov/bevprocedures.pdf>].

After two years of often difficult negotiations, the Japanese market briefly reopened in late 2005 for some U.S. beef, if it was from plants meeting special Japanese requirements and so certified by AMS.²⁸ The agency also widely offered such export verification (EV) services to U.S. plants seeking to meet the import specifications of other countries besides Japan, and this EV continues. The Japanese in January 2006 again blocked all U.S. beef after finding some ineligible beef products (i.e., veal with bone) from one of the EV certified plants. Exports of some beef products to Japan again resumed later in 2006 (the Koreans in late 2006 ostensibly opened their market to some U.S. beef as well).²⁹

Separately, an international team that had examined Canada's BSE response emphasized the need for mandatory ID, and the team observed that the lack of such a system prior to Canada's adoption of one in 2001 "contributed to the need for extended [herd] depopulations." Some 2,800 animals there were killed.

The *European Union (EU)*, where BSE cases have been concentrated (most in the United Kingdom), now has extensive mandatory programs.³⁰ All cattle born or moved across EU state lines as of 1998 must be tagged with a unique registration number. EU states must maintain computerized databases that note births, movements, and deaths, among other information. As of January 1, 2002, all EU beef products must have labels indicating the country or countries where the animal was born, raised, and processed, including reference numbers tying the meat to an animal or group of animals, and to individual slaughterhouses.

Other obstacles already keep most U.S. beef out of Europe. However, other beef importers and exporters are moving toward national ID, and some toward meat traceability, generally starting with cattle. *Japan* instituted full traceability for its domestic beef industry, largely in response to its first BSE cases. In December 2001, Japan began tagging all beef and dairy cattle and developed a database to track each animal's birth and movement.

Canada can identify most individual cattle. Although Canadian cattle movements per se do not have to be documented, each animal must receive a unique tag when it leaves its herd of origin, which is collected at slaughter. The compulsory animal ID program, which applies to all bovine and bison, began in 2001. Officials assert that their program provided much of the information on Canadian cattle movements in both the Canadian and U.S. BSE investigations (although some critics

²⁸ For example, one of the requirements is that only beef from cattle of 20 months or younger is shipped. Roughly 70% of the 32-35 million U.S. cattle each year have been 20 months of age or younger, although verifiable age records may only be available for anywhere from 10% to 25% of cattle, according to estimates by USDA and others.

²⁹ As noted, EV is considered voluntary, even though it has been widely viewed as a minimum prerequisite for access to the Japanese and other foreign markets.

³⁰ Sources for this section: Roxanne Clemens and Bruce Babcock, "Meat Traceability: Its Effect on Trade," in the *Iowa Ag Review*, winter 2002; and Sparks, *Linking the Food Chain*.

argued that data gaps made the program less effective than it could have been in identifying all suspect animals).³¹

Australia, like Canada another major U.S. export competitor, has a system to identify all cattle, and uses carcass and boxed meat labeling procedures that, it claims, can trace meat back to the animal's origin. Australia has been moving toward a fully integrated program linking animal electronic ID devices, product barcoding, and a central electronic database. *New Zealand* has implemented cattle ID.

Legislation

USDA has claimed broad authority, under the Animal Health Protection Act (AHPA; 7 U.S.C. 8301 *et seq.*) to implement an animal ID program, presumably making new legislation unnecessary. Some, however, believe that the AHPA might limit USDA's options. For example, does it empower the Department to require producers to report data to a private entity?

Several bills have been offered in recent years aimed at clarifying USDA's authority and/or spelling out what type of program should be established. Congress also has played an important role by providing funding for animal ID and placing conditions on use of that funding.

A number of policy options, possibly including legislative alternatives introduced in the past, are expected to be discussed in the **110th Congress**. A likely venue for these discussions is House and Senate Agriculture Committee work in 2007 on a new omnibus farm bill. The new chairman of the House Agriculture Committee, for example, has been the chief sponsor of legislation (including H.R. 1254 in the 109th Congress) to mandate a program.

In the **109th Congress**, several animal ID bills were offered. H.R. 1254 would have amended the AHPA to require USDA to establish a mandatory program for all farm-raised animals, and authorized federal appropriations to fund it. Another bill (H.R. 1256) would have amended the AHPA to exempt certain information collected under an animal ID program from FOIA disclosure. Meanwhile, H.R. 3170 would have established a privately governed Livestock Identification Board to create and implement a mandatory system.

With regard to funding, both the Senate-reported and House-passed versions of the USDA appropriation for FY2007 (H.R. 5384) would have funded the Administration's budget request for another \$33 million for animal ID development. However, the House version conditioned use of the money on the Secretary first providing the House Appropriations Committee with a "complete and detailed plan" for the program, "including, but not limited to, proposed legislative changes, cost

³¹ The program is administered by the Canadian Cattle Identification Agency, a nonprofit industry agency, with oversight by the Canadian Food Inspection Agency. Website: [<http://www.canadaid.com/>]. A Canadian Sheep ID Program began January 1, 2004. Canadian and Australian officials testified extensively on their respective ID systems at the House hearing on September 15, 2005.

estimates, and means of program evaluation, and such plan is published as an Advanced Notice of Proposed Rulemaking in the *Federal Register* for comment by interested parties.” The accompanying House report (H.Rept. 109-463) expressed concern about the ID program’s progress and transparency. The accompanying Senate report (S.Rept. 109-266) asked the Government Accountability Office to review USDA’s steps toward establishment of a program, and it also emphasized that the Department should work with private industry on animal ID. The House and/or Senate reports also directed that various amounts be allocated to a number of specified ongoing ID pilot programs. Final action was uncertain as of mid-January 2007; USDA and its programs were operating under a continuing resolution at that time.

During the full House’s consideration of H.R. 5384, a floor amendment by Representative Paul to prohibit all funding for the animal ID program was defeated by a vote of 34 to 389. Withdrawn, on a point of order, was a King amendment to create a mandatory but privately administered animal ID system. The amendment paralleled his bill (H.R. 3170) to do the same.

In the **108th Congress**, a number of proposals to establish animal ID programs were introduced but not passed, including S. 1202/H.R. 3546, the Meat and Poultry Products Traceability and Safety Act of 2003; S. 2007/H.R. 3714 [Section 5(b)], the Ruminant Identification Program; S. 2008, the National Farm Animal Identification and Records Act; H.R. 3787, also titled the National Farm Animal Identification and Records Act; H.R. 3822, the National Livestock Identification Act; and S. 2070/H.R. 3961, the United States Animal Identification Plan Implementation Act.

In the **107th Congress** and the **first session of the 108th Congress**, much of the debate over the costs and benefits of expanded animal ID and meat traceability occurred within the context of COOL. Panels of both the House and Senate Agriculture Committees held hearings on COOL implementation. In reviewing the COOL issues, lawmakers learned more about how animal ID systems could be used for other purposes, most notably to find and eradicate animal diseases like BSE. They also were exposed to more of the trade implications surrounding animal ID in particular and meat traceability in general. The agriculture committees also have held hearings on animal ID specifically.³²

Although most animal industry lobbyists generally appear to agree in concept on the need for a national plan, a consensus on its key elements is still evolving. New developments regarding the BSE situation, unforeseen outbreaks of some other potentially devastating animal disease, or some act of bioterrorism are examples of events that might propel further action.

³² See, for example, Senate Committee on Agriculture, Nutrition, and Forestry, *Development of a National Animal Identification Plan*, 108th Cong., 2nd sess., S.Hrg. 108-606; and House Committee on Agriculture and the Subcommittee on Livestock and Horticulture, *The Development of USDA’s National Animal Identification Program*, 108th Cong., 2nd sess., Serial No. 108-24.