

Animal Agriculture and Identification: Historical Significance

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The establishment of a national animal identification system in the United States has become an imminent issue amongst animal agriculture. The diagnosis of a BSE cow in Washington state and the potential for agroterrorism exemplify the need for an effective animal traceability system. Although these recent events have put animal identification in the forefront, the issue comes with an extensive history.

Historical Identification

Livestock identification in the United States has been documented in large animal production industries dating back to the late 1800s and early 1900s. Cattle ranchers, to indicate ownership and deter theft, first used hot iron branding. Swine producers, for registration and record keeping purposes, used ear notches for individual animal identification.

One of the first identification systems was ear-tagging cattle for the federal tuberculosis eradication program, which was initiated shortly after World War I.¹ Programs such as this have laid the baseline from which animal identification plans were developed.

The U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) and its predecessor agencies began using ear tags, back tags, tattoos and face brands in the early 1960's. These identification methods were required by statutory regulations and successfully used to trace the movements of diseased animals during disease outbreaks and eradication programs, including brucellosis and hog cholera.² APHIS has long been involved with livestock identification as it has evolved over the last half-century. Industry organizations such as the U.S. Animal Health Association (USAHA) and the National Institute for Animal Agriculture (formerly Livestock Conservation Institute) have played unequivocal roles in the status of livestock identification today.

Coordinated Direction

Livestock Conservation, Inc. (LCI) marked the first documented collaboration of industry leaders in 1969 for animal identification, establishing a swine identification committee. The committee, chaired by Bernard Ebbing of the Rath Packing Company, included a variety of industry representatives, as well as USDA participants. Informal discussions, in previous years, revolving around disease control, identified the need to trace feeder pigs to a farm origin or a producer. At that time, the only records traveling with these pigs were for vaccination. Uniformity in interstate shipping regulations became a major concern. Identification for market cattle was also progressing at this time. The cattle and swine industries were learning from each other as identification programs progressed.

Through the 1970s, livestock identification became a maturing issue for leaders of the livestock industry. Many felt that the industry was on the verge of establishing systems for cattle and swine, particularly with federal disease eradication programs becoming a reality. Broad standards were accepted by the USAHA in 1977. These include:

1. Each identification number must be unique and traceable to the individual herd owner.
2. Removal or tampering with the device must be very difficult and, if such occurs, easily detectable.
3. The system to be adaptable to computerization and storage.

4. The system shall be cost-effective in the broadest sense of the term.
5. Preserve confidentiality.
6. Violation of federal and/or state law to tamper with or remove a remote-sensing device.
7. Owner participation should be voluntary.
8. Restrict electronic identification of livestock to compatible or non-interfering systems.³

Many of the same issues included on this list are still being worked on today, demonstrating the difficulty of reaching broad-level consensus in the establishment of a national identification system.

Nineteen seventy-seven (1977) was a benchmark year for identification, with the establishment of the National Livestock Identification Board. LCI organized the group in absence of a national advisory committee for livestock identification. The purpose of the board, chaired by Richard Nelson of the Holstein-Friesian Association of America, was "to give guidance and direction to the development and use of electronic identification and management devices in such a way that this system can succeed in providing the greatest benefit to the producer and serve the best interests of the livestock industry nationally."³ Work toward establishment of electronic identification dates back as far as 1973. During this time period, USDA, APHIS supported research at the Los Alamos Scientific Laboratories (LASL), with actual demonstrations of transponder technology being exhibited by 1975 in cattle.⁴ More reports of actual technologies would soon follow, continuing even today as electronic identification continues to evolve.

Much of the work evolved through the 1980s, with industry leaders continuing to meet through the forums provided by LCI and USAHA. Harold Minderman of the Iowa Farm Bureau Federation, who chaired the LCI Identification Committee from 1974 to 1984, provided important leadership to industry as identification continued to develop. Swine identification was nearing a mandatory status, as recommended by the LCI Identification Committee in 1982. Evaluation of pilot programs, such as Market Swine Testing, over recent years provided valuable information as to what challenges a national system would face. These challenges focused on acceptable levels of tracking as industry realized the importance of live traceback in dealing with the tattoo system in place at the time.⁵ Similar projects for cattle traceability were also taking place.

The USAHA Livestock Identification Committee passed three "Statements of Position" in 1986. The first resolution noted a lack of uniformity of standards of identification, stating, "the USAHA Livestock Identification Committee requests appropriate action that will bring uniformity among all states in size and quality of device as well as in the coding or numbering system, all in keeping with existing specifications and/or requirements." A second statement called for pursuit of compatibility with a Canadian national system, recognizing advantages if done so. The third statement dealt with the evaluation and possible modification of numbering and/or coding systems.⁶

Nineteen eighty-six (1986) also brought a report to LCI on the USDA's Bar Code Identification System on backtags for cattle.⁶ This report offered information on feasibility and understanding of how electronic identification can function in practice.

In 1988, the Livestock Conservation Institute (LCI) hosted the International Livestock Identification Symposium. This symposium was the first of its kind, providing a forum for progressive discussions on establishing a national system. At that time, the swine industry – through USDA – was in the process of finalizing the rule for mandatory identification for sows and boars. Neal Black, former president of LCI, highlighted seven lessons that animal agriculture had recognized from the swine ID program.

1. Any kind of enforcement program based on voluntary identification is doomed.
2. Ill-advised, punitive enforcement programs based on identification which unfairly penalize producers will lose support and they'll find ways to beat the system even if mandatory.
3. An ID requirement that is not enforced at all levels by the appropriate authorities is of little value.
4. ID methods must be related to the surveillance program being proposed.
5. A program based on identification must show results and those results must be apparent to the industry if the precision that is vital to the successful identification and traceback is to be maintained.
6. Enforcement of a regulatory program based on identification must be uniform and prompt.
7. Improvements in performance and reductions in cost will continue in electronic identification, bringing that method ever nearer to practicality for the livestock industry.⁷

The National Livestock Identification Symposium in 1994, hosted again by LCI, brought forth the true frustrations of a national ID system. The realization of available technologies was becoming evident, in addition to the underlying obstacles of implementation. Then Livestock Marketing Association Associate Manager of Government and Industry Affairs Nancy Robinson summed the thoughts of the conference well by saying, "We can allow our old fears, doubts and nay-saying to stand in the way of real progress in responding to the varied and numerous demands for national livestock ID systems. Or we can begin to build a framework for action."⁸ Nearly ten years passed before a true harvest of this statement was gathered, however the 1994 symposium set the industry into motion. The key consensus indicated, though, that current systems were inadequate. This symposium was also the first venue for exhibitors to showcase livestock ID technologies.

USAHA, in 1994, also brought a new emphasis to animal identification. Dr. James P. Davis, senior staff veterinarian with USDA, reported on a national premises identification in the modern sense and how it would affect industry relative to cost, record keeping and regulations. Davis specifically noted that animal identification had not significantly changed in the last 30 years. By 1995, USAHA had put forth a resolution calling for USDA APHIS to develop guidelines for a national premises system, allowing for a system to take effect by April 1996. This led USAHA to continue to urge USDA to take an active leadership role in subsequent years. USAHA was continuing to work closely with LCI representing industry in the system's development.

LCI's National Farm Animal Identification Symposium in 1998 provided a forum for species groups to work in a small group setting on issues facing their particular industry. Three groups, Cattle, Swine and Other Species (sheep, goats, horses and llamas) reported on species-specific issues and needs as identified by these groups. The program also featured Will Pape, Chairman of the Board for AgInfoLink, as he addressed the future for food animal information systems. His presentation focused on technological benefits and challenges that would ultimately affect a producer's bottom line. Pape's parallels with electronic credit card readers exemplified how a national ID system could work, specifically noting that such a system should not interfere with everyday operations. This symposium was also the first in-depth look at developing systems in the U.S., as well as working systems in Canada and Australia.⁹

Achieving Results

The year 2002 brought ID/INFO EXPO, hosted by the National Institute for Animal Agriculture (LCI's successor). This conference was yet another crucial step for implementation of a national system. Highlights included a look at the journey of animal identification, as well as numerous reports on identification technology and information systems, particularly a report from the Wisconsin Livestock Identification Consortium. This presentation, by Neil Hammerschmidt, stressed the importance of cooperation on identification and more importantly how it was being accomplished in Wisconsin. This would provide an important template from which industry moved forward. The National Identification Development Team, established in early 2002 by NIAA, presented the first preliminary draft of what later would be known as the U.S. Animal Identification Plan (USAIP). Attendees to ID/INFO EXPO 2002 had the opportunity to provide input into the plan.¹⁰

Upon further development, the draft plan was presented at the 2002 US Animal Health Association (USAHA) meeting, which resolved to ask USDA APHIS to establish a joint state, federal, and industry group to further advance the work.

Throughout 2003, the resulting National Identification Development Team (NIDT) composed of approximately 100 animal and livestock industry professionals representing more than 70 associations, organizations, and government agencies, advanced the work plan to produce the initial draft of the USAIP.

The USAIP 2003 draft was presented at the USAHA meeting in October 2003. There, a resolution was passed that accepted the plan as a work in progress, encouraged its further refinement and implementation, and requested APHIS to recognize the standards in the plan as official. The NIDT steering committee received comments through January 31, 2004, which were provided to the Species Working Groups for further consideration.¹¹

At ID/INFO EXPO 2004, the interest in identification was evident, as nearly 500 stakeholders attended the meeting. Following instances of BSE in Canada and the U.S., the collaborative industries knew that a national system could not wait any longer. Earlier in 2004, Agriculture Secretary Ann Veneman announced that USDA would prioritize an identification system and provided \$18.8 million in 2004 for that process. ID/INFO EXPO 2004 hosted a variety of key speakers, including Under Secretary Bill Hawks and VS Deputy Administrator John Clifford. In addition, the Species Working Groups presented their latest work and recommendations. These included cattle, swine, sheep, goat, bison, and equine, as well as the markets and processors.

Present Day

Currently USDA has entered cooperative agreements with states and tribes across the country to aid implementation of premises systems across the country, over the next year (2004-2005). Upon selection of the Wisconsin Livestock Identification Consortium system as the interim model for premises registration, many states are now beginning to register producer's operations at the state level, which will eventually be drawn into a national system.

Moving forward, the President's budget has requested \$33 million for NAIS implementation in 2005. A variety of issues are still outlying, and must be addressed before a complete workable system can be functional. These topics include, but are not limited to:

Data Housing

Confidentiality

Funding and Industry Cost Burdens

Producer Participation

Voluntary vs. Mandatory

Technology/Information System Standards

Industry and government continue working together for resolution of these issues. A structure has been established for industry to provide input through the (Department of Agriculture) Secretary's Advisory Committee on Foreign Animal and Poultry Diseases. Key industry participants include the U.S. Animal Health Association, the National Institute for Animal Agriculture and the Species and Issues Working Groups established through the development of USAIP. USDA is working to establish legislation for maintaining confidentiality of data housed within the system. In addition, USDA has stated that it will maintain NAIS as a voluntary program during implementation, although most stakeholders anticipate that the program will ultimately become mandatory.

Summary

The advancement of livestock identification has had a long history within this industry. The process has been a long and intricate one, however the concerns of industry leaders continue to be addressed to ensure a system that fits today's industry in an attempt to minimized burden on all sectors. The realm of technology continues to advance, as industry appears to be more coordinated now than ever, including federal and state authorities, as well as industry and grassroots organizations. Support for a national identification system is now nearly universal; progress continues in determining the intricacies of how a system will be implemented under the guidance of USDA.

References

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Graphic Explanations/Captions

"IndustryDiscussion.jpg"

Forums such as NIAA's ID/INFO EXPO and the U.S. Animal Health Association are important for addressing issues with animal identification. Industry leaders can collaborate to reach solutions on important topics.

Credit: NIAA Photo.

"IDWorkPlans.jpg"

The National Identification Work Plan and the U.S. Animal Identification Plan were two landmark documents in the establishment of the national animal identification system. They bring forth the collaborative efforts of state and federal animal health officials and industry.

"ID/INFOEXPOLogo2004B.jpg"

Logo for ID/INFO EXPO 2004. Stand alone graphic, relative to section.