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Research Paper

## **The National Animal Identification System implementation and controversy**

### **Abstract**

This paper examines the implementation of the National Animal Identification System (NAIS) in the United States over the past seven years and how the implementation has created controversy discussion regarding voluntary traceability systems for livestock producers. Discussions between the USDA and cow-calf producers suggest that the NAIS is a system that only works for a specific type of livestock producer, the large-scale feedlot. This paper will also discuss the problems NAIS has created and what steps are being taken to resolve these issues. Controversy over the NAIS revolves around the perceptions that the program is a financial inconvenience, an invasion of privacy and simply too much national government involvement. Along with controversy opinions, comes the problem of implementation. Several people believe that the system should be voluntary, completely eradicated, or nationally mandatory. Too many gaps and uncertainty is involved with the NAIS and has caused a slow implementation process. This slow implementation process and lack of acceptance caused the USDA to eradicate the program in February 2010 and leave traceability decisions to the states.

### **Introduction:**

The National Animal Identification Systems (NAIS) allows health officials to quickly and effectively trace livestock and poultry during disease outbreaks or animal health

emergencies. The system allows the facility and other animals exposed to the contaminated animal to be located in a timely manner. NAIS was developed to eliminate the lengthy process of tracking down contaminated animals. The system allows health officials to quickly find and identify the infected animal and/or facility. Several studies have been conducted to determine the advantages and disadvantages of the NAIS, as well as how the program can and has improved traceability during disease outbreaks. NAIS is not an easy program to implement and several studies have been conducted to determine NAIS's efficiency and technology. The cattle industry requires mass transportation and national circulation of cattle in order to maintain steady revenue. Due to this continuous movement of cattle it is important to implement a national animal identification system (Augsburg et al., 1990). This system was implemented through the USDA and the Animal and Plant Health Inspection Service (APHIS); however the problem remains in persuading producers to participate in the NAIS, since utilizing the system is not required by law.

The NAIS became a high demand after the outbreak of Bovine Spongiform Encephalopathy (BSE) or "Mad Cow Disease" in 2003. Consumers demanded safer food products and to know where their food was raised and processed. In response to this demand the USDA health officials began designing a system to make controlling diseases and identifying infected livestock easier. Thus ultimately being able to reduce economic loss and resolve disease outbreaks faster (Holm et al. 1981). The demand was answered seven years ago when the USDA implemented the NAIS in 2003. NAIS was then introduced into Texas, the largest cattle producing state, in 2004. The NAIS consists of three main factors; premises registration, animal identification and animal tracing (Schulz et al. 2009).

The NAIS allows health officials to record an electronic network for each individual animal. This type of system makes it easier for the USDA to track animals based on every time the animal is moved “in” or “out” of a registered premises (Scanga et al. 2006). The system also allows officials to detect co-residents of the infected animal and trace 4 levels of contact with the single diseased livestock (Scanga et al. 2006).

**NAIS Process:**

The first step that must be taken to get involved in the NAIS is to register the premises where the animals are located. Premises can range from private or public ranches to private or school farms. The most common premises registered throughout the nation are beef operations, with dairy operations in second. The NAIS shortens the time frame to trace an animal’s history to 48 h, as compared to the 44 d investigation of BSE (Scanga et al. 2006). Once the premises are registered they are assigned an “alphabetic and numeric address” consisting of seven letters and numbers called Premises Identification Number (PIN) (Zanoni et al. 2005). Since the implementation of the NAIS, over 500,000 premises have been registered in the United States (Cima et al., 2010).

Once cattle producers have registered their premises the next step is animal identification. Animal Identification Numbers (AIN) is provided through identification ear tags, which are available through authorized AIN tag manufacturers (Pendell et al. 2010). An animal receives an AIN once it is removed from its original herd, either through selling or harvesting. Once the cattle producer decides to move the animal from its original herd, the electronic identification tag is applied to the left ear. According to the USDA (2007), once the animal is harvested the AIN found in the electronic ear tag is terminated and recorded in the NAIS database. Once the

premises and animal is registered into the NAIS database the information is available to trace back or trace forward a specific animal once a disease outbreak is detected. When a simulation was conducted by Colorado State University it was determined that it would take 215 s to find results for an animal and its co-residents in a population of 2 million head (Scanga et al. 2006). This simulation ultimately determined that in those 215 s over 500 head of cattle were traced to have direct contact with the diseased animal and 1.2 million head were traced at level 4, which supports the theory of 5 degrees of separation (Scanga et al. 2006). This very process has caused concerns for producers and has led to implementation issues.

### **Implementation Problems:**

Currently the success of the NAIS is dependent upon voluntary participation of livestock producers. Even with the new program, the USA is several steps behind other countries in the idea of implementing livestock traceability programs; ultimately decreasing USA competition in the global meat market (Schulz et al. 2009). When the USDA implemented the NAIS, the deadline for mandatory participation was set for 2008 (Garrity et al. 2009). However, working under this deadline caused several problems for NAIS and the deadline date was disregarded (van Veen et al. 2009). Producers were hesitant to participate in the program due to too many unresolved problems with the implementation. Producers were also concerned about their privacy being infringed by the government (Breiner et al. 2007). The majority of producers have responded negatively to NAIS, causing the 36% participation rate (Cima et al. 2009, USDA). The cattle producers do not want government getting involved in their operations and affecting the industry's income. Producers prefer to keep their records, databases and breeding systems confidential, due to the competitive nature of the cattle industry (Schulz et al. 2009). Producers

are worried about the government knowing the amount of cattle being produced and then in turn taxing the producers for that amount of cattle (Breiner et al. 2007). Schulz and Tonsor (2009) conducted a survey of cow-calf producers to determine their preferences regarding voluntary traceability systems. In the survey, a total of 609 out of 2,000 beef cattle producers provided extensive responses. The survey was submitted to *BEEF* magazine subscribers. Subscriptions are traditionally sent to producers and owners of 100 or greater head cattle herds. Through this study there was not a large variety in producer types, allowing only the large-scale producer opinions to be expressed in the results. In this survey, producers were given the opportunity to choose three traceability system options when presented a cow-calf scenario. The three options were NAIS traceability, advanced traceability, or no traceability. Since the popularity of traceability systems vary and are unpopular with most producers, the option of no system was included to allow more accurate reactions to scenarios. The results of this study concluded that the average cow-calf producer preferred no traceability over NAIS traceability and NAIS traceability to advanced traceability (Schulz et al. 2009). No studies have been conducted regarding the preferences of retailers or small-scale producers.

These results suggest that in order to resolve the problems involved with implementation the USDA has to design and promote an improved voluntary identification program. In order to increase participation rate the USDA should redesign the NAIS so that it could serve as a marketing tool for large-scale producers and not require small-scale producers to be involved. More advanced systems would allow processors, feedlots, and producers to utilize the traceability information throughout the entire food supply chain. An advanced traceability system focused on marketing would give producers, retailers, processors and feedlot managers a better reason to register their premises and identify their animals. This observation was made by

Schulz (2009) in his educated opinion that the marketing of advanced traceability would increase the final market value for consumers, since more consumers are demanding tracing and identification information on their meat products. Ultimately, the new program would add value to the cattle that are marketed by the producers and eventually provide more money for the large-scale producer. The advanced traceability information would provide more value for the retailer because consumers may be willing to pay for this additional information. However, not only will an improved program and marketing increase participation. Several producers expressed that they were opposed to a national identification system due to government involvement (Breiner et al. 2007). With these results, Schulz (2009) suggested that producer participation would not improve until the traceability systems were managed by private entities. Implementation and participation rates will improve if the NAIS is privately managed and taken out of the hands of the national government. Schulz (2009) discovered that participation in NAIS or advanced traceability programs could increase through the providing incentives for producers that participate. Another option discussed by Schulz (2009) is to discount for non-participation by the producers. Specifically, the NAIS could increase performance by offering small premiums to producers who implemented the system on their premises and animals, and then discount animals not registered. This could increase participation and improve the implementation goal, which is 80% participation by cow-calf producers (Cima et al. 2009, USDA). These problems and solutions involved with the NAIS implementation will not be easily solved. However, while the USDA tries to fix the participation aspect there are some advantages that the NAIS provides for consumers, producers, etc.

**NAIS Advantages:**

Improved animal traceability and identification programs can reduce the economic losses that are typically experienced during and after an outbreak of animal diseases (Disney et al. 2001). Through utilizing this system in the beef cattle industry it would be possible to determine the birth site and other locations the cow and/or calf has been throughout its life. Choosing to participate ensures that producers will receive the information they need to protect their animals and their investments. With timely, accurate information cattle producers and health officials can contain a disease outbreak and/or determine the animals exposed to infected animals (USDA et al. 2007). Being involved in NAIS would better prepare cattle producers for future disease outbreaks and reduce the economic strain. If a cattle producer participates in the NAIS or any traceability system, they have the potential to expand their marketing opportunities at home and abroad (Disney et al. 2001). Consumers will be more likely to purchase an animal that has not been exposed to disease, which will maintain and protect commodity prices. Animal identification adds an additional protector for the animal food supply chain through promoting and increasing consumer confidence in the livestock industry (Disney et al. 2001). From the producer's end of NAIS advantages, the genetics and certification of the herd could be improved due to the NAIS tracing diseased animals to poor management practices premises and tracing non-diseased animals to superior managed facilities (Disney et al. 2001). The implementation will minimize the amount of time required by a producer to check cattle during an outbreak, which in the end saves the producer money on labor and equipment (Disney et al. 2001). In a study conducted by Disney (2001) he weighed the benefits against the costs for national animal identification program. He determined that by being able to rapidly identify infected animals and even herds is a critical point at containing and eradicating a disease outbreak. The more

rapid the response to disease, the less economic losses for producers. Identification and traceability will help facilitate the response time and minimize the time, cost and labor in tracing animals back to the original premises. According to the USDA (2008), by choosing to participate in the NAIS, the producer will join a national disease response network built to protect the producer's animals, neighbors and economic livelihood against the devastation of a foreign animal disease outbreak. The NAIS will help the USDA reach the long-term goal of being able to identify premises and livestock that have had direct contact to disease in less than 48 h time line (Myers et al. 2006). Even though the system will advance response time to disease, it does have its disadvantages to producers.

**NAIS Disadvantages:**

Disadvantages reduce the number of producers willing to participate, because producers see more cost and work versus benefits. Time must be well managed in cattle operations; therefore, if the disadvantages outweigh the advantages for an operation the producer will not implement NAIS. For large cattle producers, disadvantages of implementing NAIS would deal with cost and time. Electronic identification tags cost \$2.00 per tag (Schroeder et al., 2008). The only manual labor involved with the system is ear tagging. Since most cattle producers already tag their cattle for their ranch records, the NAIS does not require new techniques for tagging. However, some producers feel it is burden to electronically catalog the animals because they are unfamiliar with the technology (Breiner et al. 2007). According to the USDA (2009), the electronic identification tag scanner is not necessary for cattle operations that have a herd of less than 200 head of cattle. Since most beef cattle producers have cattle herds well exceeding 200 head, the scanner or reader would be an additional cost to the implementation of NAIS for



majority of cattle producers. The NAIS software program is optional, but recommended by the USDA (2009). However, if the producer already has a computer software program for their record keeping purposes there is no need to purchase the NAIS software program. Advantages and disadvantages always accompany any new system or program, but the NAIS issues have caused some controversy in the livestock industry.

### **The Controversy:**

The development of the NAIS through the USDA brings up a lot of questions and concerns for producers, both large and small-scale. These concerns have caused controversy between producers and the national government. Zanoni (2005) expresses that the implementation of the USDA's National Animal Identification System is a threat to the traditional freedom that rural home-dwellers and small-scale producers enjoy. This idea is supported by the fact that people raising their animals for personal or neighbor consumption are required to register their premises and animals, even if the animals only leave the premises for slaughtering (Zanoni et al. 2005). Much of the controversy does revolve around the plan that owners raising small numbers of animals, less than 10, will have to identify the same way producers raising over 200 head are required to do (Zanoni et al. 2005). Zanoni (2005) also identified that not only will cattle producers have to register, but anyone raising horses, pigs, sheep, goats and chickens will have to participate with the NAIS. The benefits that were previously discussed in this paper are associated with the production of cattle at a large scale and Schulz (2009) expresses that the enhancement of livestock exports and animal tracing does not benefit the small-scale producer. So the controversy lies in the argument that the NAIS is more of a burden than a benefit to small-scale producers (Cima et al. 2009, NAIS). However, the other argument is that NAIS will provide the USA an advanced tracing program that will decrease

disease outbreaks and increase marketability in the foreign meat trade. Until more studies are conducted on costs versus benefits of the NAIS, it is unclear which argument is the correct one. This controversy, low participation rate and the underutilized NAIS budget (Cima et al. 2009, NAIS) has led to the recent disposal of the national NAIS and has replaced the system with a state-administered system (Cima et al. 2010).

**Conclusion:**

The success of animal tracing and animal identification is currently uncertain. This uncertainty was brought on by the recent eradication of the national program. The recent change of hands for the NAIS has left the overall outcome of the system up to the state government. It was expressed by Cima (2010) that the recent change has left our country vulnerable to disease outbreaks until the states start implementing new programs, which could take anywhere from 10 weeks to 5 years. The NAIS at the state level will work similarly to the national system, however to insure its success the USDA must produce a system that allows for quick and accurate trace back across state borders during a disease outbreak (Cima et al. 2010). The NAIS is a program that could have improved animal health in the event of an animal disease outbreak at a national level, but so much controversy has caused the USDA to give up and place the burden on the states. NAIS would have reduced the amount of time needed to trace exposed and infected animals at a national level. With a quick response to disease the feedlot and meat industry will be less affected. The cattle industry overall could benefit significantly from advancing animal identification and even implementing a state level tracing system. However, the lack of participation and controversy has caused the USA to start back at where they were before the BSE outbreaks; unable to identify diseased animals in a timely and efficient manner.

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