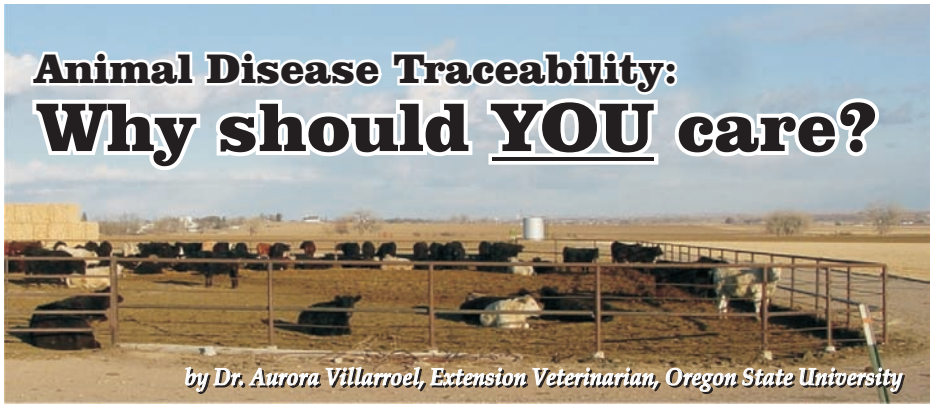
Animal Disease Traceability: Why should YOU care?



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After 44 days of investigation, less than a third of cows imported from Canada along with the first case of mad cow disease in the history of the U.S. had been located. The first animal positive for mad cow disease or BSE (Bovine Spongiform Encephalopathy) in the U.S. was diagnosed in a dairy cow in the state of Washington in December 2003. Available traceback information showed this cow was part of a group of 82 cattle from a dispersal sale in Alberta, Canada. Two weeks after the positive BSE diagnosis, only 11 of the 82 animals were accounted for, 10 of which were at the same farm as the affected cow. This means, only one other cow had been located on a second farm. After one month into the traceback investigation, only 23 of the 82 cows had been located. There is no more information after this, and the investigation was "completed" after 44 days.[1]

Two other cases of BSE have been discovered in the U.S. since the initial case in December 2003. The investigation of the second case of BSE (diagnosed in June 2005) took 75 days, and the investigation of the third case (diagnosed in March 2006) took 49 days.

So What?

BSE is a slow degenerating disease that is thought to have a latent period of years. Imagine what could have happened to the U.S. livestock industry if instead of an excruciatingly slow-spreading disease such as BSE it would have been an outbreak of a fast-spreading disease such as FMD (food and mouth disease) or VS (vesicular stomatitis)?

Let's look into the experience of the U.K., a country that has dealt with not just one, but two outbreaks of FMD in the past 10 years; in 2001 and 2007. During the outbreak of 2001, a total of 2,030 cases of FMD were diagnosed across the country. Within 44 days of the outbreak (the time that took the USDA to trace back less than a third of the animals transported with that single positive BSE case in the U.S.) there were already 1,135 cases of FMD spread throughout more than half of the British territory. The highly contagious nature of this disease, along with the trade implications of a positive diagnosis, led to the slaughter of some 6 million animals (4.9 million sheep, 0.7 million cattle and 0.4 million pigs) to stop the outbreak.[2] According to data from the U.K. Department for Environment, Food and Rural Affairs (DEFRA) it took 3 weeks to diagnose the first case, and by then the disease had spread into 9 different areas of the U.K., which propagated the disease. To avoid the spread of highly contagious diseases such as FMD, slaughter of all animals on unaffected neighboring farms is a must. In the U.K. all animals within roughly 2 miles of an affected farm were slaughtered. It didn't matter if the animals on those farms were affected or not, it was a requirement to create a buffer zone of security for other farms.

Did I mention this happened on an Island about the size of Idaho? How many farms and animals would be affected if something like this were to happen in the U.S.? How long would it take to find out where the animals came from and who else might have been exposed?

How is this different from the National Animal Identification System (NAIS)?

The NAIS emerged as a mandatory program devised by the USDA after the first outbreak of BSE in the U.S. in 2003 with the goal of being able to trace back all movements of an animal within 48 hours of diagnosis of a disease of interest. In 2007 the USDA changed it to be a voluntary program, encouraging all livestock producers to participate to be able to have 100% of the premises registered by 2009. Some individual states such as Wisconsin, Texas, and Michigan made participation mandatory.

Animals targeted by the NAIS included all livestock species such as cattle, sheep, goats, horses, swine, poultry; cervids; and aquatic species important for human consumption.[2] There were three components to the NAIS: premises registration, animal identification, and animal tracing. Over the years, the NAIS drew opposition from several groups due to financial, civil rights, and religious concerns. Most of the opposition to the NAIS seemed to be in response to the premises registration (civil rights) and animal identification parts (cost and religious beliefs).

Last month (February 5, 2010) the USDA reframed the program to allow flexibility while trying to accomplish the main objective of the program: traceability.

What is Animal Disease Traceability?

It is the ability to investigate the movements of an individual. In this case, it refers to livestock that are at risk of transmitting a disease considered to be of national interest such as foreign animal diseases, regulatory diseases (tuberculosis and brucellosis) or diseases considered emergencies by the U.S. Secretary of Agriculture.

The large majority of the devastating diseases that affect cattle are transmitted by direct contact or by confinement in close proximity. Additionally, we know that stressful conditions such as transport and comingling at markets and holding pens are a culprit for immunosuppression and a risk for developing disease. Therefore, these practices represent the major influencing factor for the spread of highly contagious diseases. Animals that get infected will take 1 to 2 weeks before showing clinical signs of the disease, and by then they can be hundreds or thousands of miles away.

When animals from different farms and areas (even different states) are housed in close proximity for a short period of time, such as at markets and auctions, and then transported to their final destinations throughout the country within days of the event, a highly contagious disease may be spread along with these animals. Being able to pinpoint exactly where each animal came from and where it went is imperative to effectively locate all possible places of dissemination.

What information is needed for traceability?

The USDA has not defined the "necessary data elements" to determine all movements of an individual animal during

its entire life. With the voluntary nature of this new program, and deferring the control of the details to the States or Tribal Nations within the U.S., it is even less clear what information should be collected to monitor animal movements.

What are the problems with the current program?

This is a straight forward answer: T**he implementation of the program.** These are some of the problems:

- the cost of the program is all on the producer
- there is no financial incentive or return on investment to participate in the program
- paperwork
- timeliness of documenting and reporting
- inconsistent and confusing programs across States
- the wide range of production systems and differences in their management
- concern about the release of private information such as addresses, premises locations and number of animals on the premises
- concern about the possibility of a liability case against producers if a food-borne disease is traced back to the premises

Do we even need a traceback system?

Let me ask you two simple questions:

1 - Would knowing if there was a highly contagious disease being spread among cattle in the U.S. at markets or other co-mingling locations better protect your cattle and ranching operations?

2 - Would you like to know which ranches or states are infected so your cattle do not come in contact with them?

I assume if you are reading this that your answer to both is "yes". So, a few more questions…How would you know these things if we can't trace the movements of each animal? What if the bulls or replacements you are considering buying from California actually originated from further south?

The USDA's program is not a new idea. Other countries, such as those from the European Union, have successfully established a comprehensive animal ID system that has already proven its value several times (e.g. FMD outbreak in 2007, Blue tongue outbreak in 2008). If 27 countries with different languages and cultures can come together to implement a comprehensive animal ID system, why can't we do it in the U.S.?

If it is obvious that we need to be able to follow animal movements, the obvious question is "Why hasn't anything bad happened yet?" Truly I don't know the answer, but I don't think the cattle industry can sit back and wait any longer. The major risk factors identified by the investigators following the FMD outbreak in the U.K. were the large increase in the number and distance of animal movements, and the massive decrease in the number of abattoirs that forced co-mingling of animals from farther regions compared to the previous outbreak of FMD in 1967. These risk factors are developing in the U.S. today.

References

1. USDA-APHIS. Bovine Spongiform Encephalopathy (BSE) in the U.S. USDA Newsroom.

2. DEFRA. Foot and Mouth Disease: Lessons to be Learned Inquiry Report HC888.

3. USDA. USDA National Animal Identification System (NAIS)-User Guide and Additional Information Resources. Version 2.0. December 2007.