

# NJAS 2001 Speech Contest

## Senior Division

### The Identification Dilemma — *To ID or Not to ID*

by *Laura Main, Macon, Mo.*

Angus beef cattle were introduced in the United States in 1873 from Aberdeen and Angus in northeast Scotland. The Angus breed became and remains popular for its characteristics of smoothness, freedom from waste and high-quality meat. It is these same qualities that have been tweaked to capture a large proportion of the beef industry. In order to continue to improve the Angus breed, and the cattle industry in general, a voluntary national animal identification system is proposed to be in place in the United States in the next three years.

A similar system was used to eradicate brucellosis. Each time a calf was vaccinated for brucellosis, a tag was permanently placed in its ear and used by the United States Department of Agriculture (USDA) to trace the animal. With new scares, such as foot-and-mouth disease (FMD) and bovine spongiform encephalopathy (BSE), animal identification



Laura Main

is even more important. An effective traceback system will allow the government to identify the origin of defective products, leading to rapid recall of other animals in contact with or from the same source.

According to John Wiemers, the director of the national animal identification program for the USDA, "You cannot manage what you cannot measure ... Without identification, the national herd is vulnerable. In order to eradicate existing and future diseases and prove to our trading partners that we are free of them, we need to continue to identify them."

From a policy standpoint, the National Cattlemen's Beef Association (NCBA) is continually working with the USDA to improve the identification of animals to keep our beef cattle free of disease and ensure a safe, consistent product in which consumers have confidence.

An extensive animal identification system will allow for better management and improvement of products. Producers will receive performance and production measures according to standardized guidelines and from this data can benchmark herd productivity relative to industry targets. The bottom line is to enhance profitability while providing top-of-the-line goods.

Information systems will also facilitate product improvement. From carcass data, producers will apply statistics to genetic training. Hence, the uniting of an identification system and genetics will work to produce consistency in marbling, tenderness and flavor. Niche programs and Certified Angus Beef [LLC (CAB)] are advocates for this consistency.

Producers can choose between at least two types of radio frequency identification transponders embedded in ear tags. The most widely used tag at this time is the electronic "button" tag, which is compact in size, making it relatively secure and permanent. A less common type of ear tag includes a barcode, which offers the convenience of electronic reading and recording. The price of these ear tags is \$3-\$4.

Injectable transponders containing

## Intermediate Division

### Embryo Transfers

by *J.J. Palmer, Bellingham, Wash.*

Lady, a 3-year-old cow, stands calmly in the pasture munching grass. Meanwhile, Olivia, Lady's daughter, tries in vain to gain a moment of rest from the newest calf, Palmer's Pride. If Palmer had the capacity to be confused, he would be. You see, Palmer is really Lady's son but was carried to term by Olivia, who is actually his half sister. Got it?

It's a twisted family tree contorted by new technology, which allows the eggs from one animal to be fertilized and placed into the uterus of another. This process is called an embryo transfer, or ET. You may be asking, what in the world is an embryo transfer? Why should I care about it? And why is it making such a commotion?

The first embryo transfer was done in the 1890s. A man named Walter Heap successfully preformed one on rabbits. The first and only type of embryo transfers were surgical, both to flush and to implant the eggs.

To perform an ET, a set of hormones is given to a cow to multiply her ovulation. The donor cow is then inseminated during heat — three to four times, 12 hours apart. Next, the eggs are removed and inspected to see which ones are fertilized, unfertilized or degenerate. The eggs are also measured for quality; better quality eggs have a higher chance of survival.

Now you may be asking, "Why would someone want to perform this odd procedure?" The answer is simple: to maintain good genetics, get more money and increase the number of offspring per animal.

One of the biggest factors is increasing the number of calves per animal. In a normal year, a breeder can get one calf per cow. With the use of embryo transfers, that same breeder can get up to as many as 10 calves from the same cow. Keep in mind that other cows must be used to carry these calves. The recipients used are those that produce poor offspring but have great motherly instincts and high milk production.

Just as important as the egg is the donor herself. Any cow or heifer can be put through this procedure; she simply needs to be old enough to become pregnant. She should be tested for any genetic diseases or conformational abnormalities. The things that would prevent a cow from being a donor are disease, illness or problems in the reproductive tract.

Cows as young as 8 months may act as donors. On the other side, some cows over 18 can be donors. If all goes well, the number of eggs flushed can be anywhere from 0 to 30. The average is 4 to 12.

Retrieving the eggs is only half the task. The other half is finding a recipient cow. The recipient needs to be somewhat larger than the donor to ensure no problems during birth. They need be current on

computer chips are small implants that are injected under the skin. These are already widely used for identifying animals in many foreign countries. The device has been approved for implantation in the ear, the dew claw and under the tail to keep the implant out of the food supply. Injectable transponders cost \$4-\$5.

The rumen bolus contains a radio frequency identification device that sinks to the bottom of the animal's rumen. They are permanent and recyclable but do require a conventional ear tag for visual identification. These devices are slightly more costly at \$8-\$9.

Retinal imaging can provide permanent and fraud-proof identification. Each animal's retinal image is unique and remains the same from birth through maturity. A computer analysis of the pattern of blood vessels on an animal's retina provides an identification record, much like our fingerprints. Using the retinal image, future owners of the animal can access the prior ownership and management history. Although the cost of this method is still obscure, it is proposed to be as low as \$1.

Beef is a major export product for the United States, with 12% of total production exported. At a recent press conference, Glenn Slack, president of the National Institute for Animal Agriculture, commented, "If we are going to trade with countries around the globe, we have to accept that the ability to identify a hazard and trace it back to its origin will likely be a prerequisite."

The United Kingdom uses a cattle identification system known as the British Cattle Movement Service. Birth and

movement details are kept manually on passports, which stay with the animal throughout its life. Animals are not accepted for slaughter without a valid passport. Cattle tracing doesn't stop at the packing plant. The passport numbers are linked with a computerized beef labeling system that allows anyone to trace a particular package of beef all the way back to the farm of origin. In the United Kingdom, the government has paid all of the startup and running costs.

Canada's national cattle ID system relies on official ear tags purchased by cattle producers and used only once. At birth or purchase, producers are asked to provide basic information to the Canadian Cattle Identification Agency's database. The CCIA tracks the cattle all the way to the packing plant where the ear tag number is retired. Startup funds for the CCIA were the result of grants from Canada's Beef Industry Development Fund and the federal government. The only direct fee to producers is the ear tags.

France has a mandatory national ID program but perhaps is better known for the identification system used by one sector of private industry. Soviba, the third-largest consumer meats company in France, developed a computerized, farm-to-consumer traceback system. Soviba farmers receive a passport issued by the cooperative within eight days of a calf's birth. When the calf reaches the packing plant, the passport information is recorded and identified with each carcass. Thus, each package of meat can be traced back to its original farm.

There are some downfalls to a national identification system that must be

considered. Recording tag numbers, describing animals and maintaining the database will require an enormous amount of man power. It will take many months and lots of money to get a national ID system up and running.

In other countries, governments have footed the majority of the bill. NCBA and some [Cattlemen's] Beef Board projects have provided all the financing thus far, but will not be able to sustain such a large project.

A major concern for producers is liability. If children start getting sick from tainted beef that can be traced back to my operation, then what? With traceback comes accountability, which scares many producers. Cattle producers from my hometown have mixed feelings about a national ID system. While many admit that there are obvious benefits, they also see many drawbacks, such as time, money, paperwork and liability. All of these concerns need to be addressed before producers are asked to submit to a national ID system.

Perhaps some would still argue that a national cattle identification program is a wave of the future. I believe that in order to protect the future of the cattle industry, the time has come. Cattle producers should pool together and assist in devising a system that will not only assure the needs of consumers, but serve the needs of producers as well. In closing, I want you to think in terms of your own Social Security number, fingerprints or dental records. From these forms of identification, our lives can be traced. It is now time that we do the same for our cattle.

all vaccinations and be tested for tuberculosis and brucellosis. Before a cow becomes a recipient, she must have a pelvic examination. This is done to ensure there have been no calving problems in the past. A high degree of estrus between the donor and recipient is vital for good conception rates.

Many people think that ET tampers too much with Mother Nature and that it is too similar to cloning, making it unethical. On a survey of 80 people, 25% said that they would never even think about performing an ET. When asked why, the people said that it is too close to cloning.

The only thing that makes it similar to cloning is that some say it is unethical and agriculturalists are playing God. They are causing a cow to overproduce eggs, fertilizing her many times, and then the eggs are removed, the "bad" eggs are being disregarded or thrown away. These facts may seem a bit hard, but they are true.

However, despite these negative arguments regarding ET, many breeders are continuing this practice because the benefits of ET are immeasurable. They allow producers to increase their production levels in ways never thought possible. One way that ET has helped is the fact that it has the ability to increase an animal's useful life. Rather



J.J. Palmer

than having to dispose of an animal, she can be used longer by carrying the eggs that are produced through ET methods.

Livestock producers have been "playing with genetics" for years through crossbreeding, artificial insemination (AI) and the use of hormones. Embryo transfers are just another step in that direction. When performing ETs, one may use natural breeding or AI. Both methods work; however, natural breeding is not usually the best choice. Cows need to be bred multiple times 12 hours apart. A bull simply will not breed a cow that many times! If using AI methods, be sure that the semen is sterile and clean.

There are two types of embryo transfers — surgical and nonsurgical. The best choice of ETs is nonsurgical. The surgical involves actually removing the uterus and collecting the eggs. The nonsurgical is actually very similar to AI. Nonsurgical methods are more commonly used for embryo collection. A nonsurgical approach avoids the potential risks to the reproductive tract and can be done in the comfort of your own home. Surgical techniques are still used on small farm animals, such as pigs and sheep.

Now you may be wondering, "How do you get the eggs out?" First,

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the cow is given a set of hormones known as luteinizing hormone (LH) and follicle stimulating hormone (FSH). These shots are given eight to 14 days after the heat cycle. The donor then is placed in a restraining chute. The rectum is cleaned of feces, and a mild anesthetic is applied. The tail is tied out of the way, and the vulva lips are washed. The closed circuit interrupted syringe method is the most common way of collecting the eggs. Once the eggs are removed, they are evaluated. They will fall into categories of *excellent*, *good*, *fair* and *poor*.

As Lady stands and eats her grass, her daughter Olivia once again carries one of her calves. Lady is only 3, and yet she has more than 30 sons and daughters. Lady would barely have three calves without the use of ET. She has opened up an entirely new aspect of beef production. With this new advancement, producers are able to achieve superior genetics, progeny and increased cash flow. They are able to sell animals without losing good bloodlines and extend an animal's productive use longer. These benefits are all due to ET.

## Junior Division

### The Importance of a Happy Customer

by Kara Wilson, Orleans, Ind.

The question often arises in our industry: What is the best thing that we, the beef producers, can do to promote our product? Today, I am going to try to answer this age-old question with the importance of a satisfied customer.

We all know the importance of staying on friendly and honest terms with other producers whom we work with. But do we really know what is important to please the consumer who buys our finished product — who in the long run will be determining our profit or loss?

Today, in our modern society, people want proof of the product you're trying to sell them and assurance that it will have the quality you promise. To keep people interested in our meat, we must take every precaution necessary to maintain excellent meat quality.

One of these precautions is to give special care and attention to location of injections for medications. Today, nearly all vaccines given to cattle are to be given subcutaneously in the neck. Yet some producers choose to ignore the proper procedures for this. They simply jab the needle in the hip of the calf and give the injection without a second thought. Producers such as these aren't necessarily trying to ruin their product; they merely don't know the consequences of practices such as this.

What people don't realize is that medication can stay in the calf for the rest of its life and ruin important cuts of meat. Talk about making a vegetarian out of someone! How would you feel if you went to the grocery store, bought a rump roast, and

found lesions in the meat when you went to cook it?

Lesions aren't the only thing. Graphic as it may seem, even pockets of puss can be found in a calf that has been given improper shots. These pockets can be discovered during preparation of the meat or, worse yet, while eating. More than likely, after an experience like this, you would never want to have anything to do with beef again.

This is why we need to stress the importance of giving injections in the correct place. Consumers who discover something as unappetizing as spots in the meat due to the carelessness of the producer

are, in all likelihood, not only never going to buy meat again themselves, but they will tell all of their friends. And before you know it, you will have a whole line of people who are unsatisfied with the meat we produce.

Improper shot location isn't the only thing that causes damage in the product we produce. Condition of the needles is also vital. Using bent, damaged or dirty needles can also cause damage. Also, the cleanliness of the area being injected has an effect.

Handling facilities and techniques are also a major concern. We, the producers, need to be sure that all work done within our operations is to the best of our abilities. When we deliver cattle to market, we trust that they will take care of the cattle from that point on. But it's our job to ensure that the product delivered to the buyers and packers is a wholesome one. If a calf is recklessly handled, the meat is likely to become bruised, creating dark-cutting characteristics in the final product that reaches the dinner table.



Kara Wilson

This may not be quite as extreme as the results of improper shots but still enough to cause a disappointed customer, who in turn will cause future problems for the beef producers.

Ideally, round walls without slats are the type of facilities you should use to run market cattle. The main thing that bruises cattle is running them through a gateway. Think about it — if a calf is rushed through a gate, the first thing that will be hit is the rib cage, where your most valuable cuts of meat are located.

Let's face it, when the choice is left up to the public, they're more likely to choose the unblemished cut of meat over the bruised one. Knowing the choice of the consumer, shouldn't we give them what they want? They should not have to sort through the meat counter looking for an appetizing steak. It's the producer's job to make sure that all the meat that goes on that counter is free of any undesirable characteristics.

The ordinary consumer's opinion is the one that is most valuable to us because that's what other people will hear. What buyers' thoughts are toward your product will either make you or break you. If they aren't pleased with the product they have purchased, they probably won't be back again — along with anyone else they tell of their dissatisfaction.

But if people like what they taste when they sit down to eat that steak they bought at the grocery, they're going to let their friends know about it, and in turn the beef industry has just gained another customer. This is why it is so vitally important to give them every reason to be happy with that purchase. For if we don't, before we know it, our industry may be damaged beyond repair. So let's work together to build and create the most efficient industry that we possibly can.

