

Grand-Scale Animal Welfare

Temple Grandin explains why low-stress handling is better for animals, handlers and the bottom line.

by Kasey Miller

We raise [cattle] for us. That means we owe them some respect. Nature is cruel, but we don't have to be," says Temple Grandin in the 2010 award-winning HBO movie *Temple Grandin*. In person, she emphasized the same thing.

Have you ever thought about how your animals are treated once they leave your farm or ranch? *You* may treat your cattle with respect and low-stress handling, but does that still occur down the line of production? Grandin is helping to make sure that animal behavior is still important in packing plants.

A woman who has greatly changed the way U.S. packing systems handle cattle, she made animal welfare and low-stress handling popular, bringing more exposure for a topic that had been in the shadows for too long. She is not the only animal behavior specialist — sharing the field with experts like Bud Williams, Ron Gill, and many other veterinarians and beef specialists — though she is certainly the most famous.

Perhaps her fame stems from her work on the grand scale, taking on a large breadth of animal welfare issues, namely an overhaul of the packing plant system in order to reduce the stress of cattle before slaughter. More than half of the animals slaughtered in the United States go through her systems, and McDonald's hired her to revamp its affiliated packing plants and to write animal welfare guidelines. Maybe her fame stems from the fact that she backs up the commonsense changes with academia. Whatever it is, though, it has been positive for all aspects of the beef industry — the animals, the handlers and the bottom line.

Positive for animals

Low stress levels are the goal, and the easiest way to tell is by an animal's eyes. Calm animals have soft, brown eyes, Grandin told participants at the Centennial Lecture Series at Texas A&M University in College Station, Texas. She said that three studies have shown that animals with soft, brown eyes have the same level of "calm" as produced by Valium. Another good indicator of stress level is the ears.

It is important to know which signs indicate rising stress levels to prevent or



► Temple Grandin reported that animals with soft, brown eyes have the same "calm" level as produced by Valium.

counteract fear, she explained. These signs include tail swishing, white eyes, head up, ears pinned back and defecation. The science behind the common sense shows that cortisol levels, indicating stress, spike during restraint, especially when the animal is handled roughly. However, cortisol levels remain low when animals are able to voluntarily cooperate.

Animals are similar to humans in that new things are frightening, but new experiences can be attractive when animals are able to approach things voluntarily. It's common knowledge that calves are curious creatures. Grandin explained the "paradox of novelty," in which new things are voluntarily approached when a calf is given time and it is the calf's idea. When forced or suddenly introduced, though, the new thing is frightening. Acclimation helps this paradox of novelty.

As an example, Grandin said cattle perceive men on foot and men on horseback differently, and that difference should be taken into account by producers. Both methods of handling are productive, but if you immediately switch methods, you must expect a change in behavior. She said that the first experience with new people, places or equipment must be good, because the animals will remember it. Animals are sensory

based, and patience and the correct pressure must be used.

"You want to understand animals," Grandin says, "get away from words."

Positive for handlers

The simple fact is that calm animals are easier to handle than excited, fearful animals. Once animals get excited, it takes 20 to 30 minutes to calm them back down, which is time and effort that animal handlers could be using elsewhere, not to mention the toll it takes on the animals.

Additionally, it is safer for the handlers when animals are calm. Improving animal welfare can also improve employee safety because calm cattle are less likely to run over employees or rear up, Grandin emphasized.

Despite the benefits of low-stress handling for handlers, Grandin shared that only about 20% of the people she's worked with at processing plants are naturally good at stockmanship. Granted, generally, fewer of those employees have a livestock background, which is why it is all the more important for low-stress handling to be taught and measured.

Behavior is typically harder to gauge than quantitative data, such as cortisol levels or performance data. Grandin has created guidelines and measurement tools for good animal handling at processing plants and feedlots.

"We have to prevent bad from becoming normal," she says.

She said that when writing up guidelines for food safety or animal welfare for meat plants (applicable to any large system), high standards should be maintained and require continuous measurement; and handling quality can be maintained by regular audits of your handling practices with an objective numerical scoring system (how many cattle vocalize, etc.). The guidelines also ban the words "properly," "adequate" and "sufficient," because these words are not measurable and their interpretation is entirely subjective. The details need to be in the guidelines.

Audits make sure that handling performance stays at a high level. They include video, which helps when paperwork is falsified, and also include measuring the percentage of animals that run, fall, vocalize, were moved with an electric prod, and,



Animal Welfare

most importantly, kept a soft brown eye.

“This uses the principle of HACCP (Hazard Analysis and Critical Control Points). We’re not measuring 10 zillion different things; we’re measuring relatively few what we call outcome measures,” Grandin says. “We’re not telling the plants how to do their stuff, but they have to make certain scores.”

Meat packing core criteria include measuring the percentage of cattle that were stunned correctly the first time, rendered insensible, prodded with an electric prod, vocalized, and slipped and fell. Guidelines like these and regular audits will keep humans on their toes so bad handling doesn’t become normal.

“Use behavior rather than force,” Grandin urged. She said that during some of her visits to packing plants, people had taken off parts of the equipment that are behavioral. Sure, it takes just a bit more patience, but by using behavior to a handler’s advantage, having calm animals and employees also helps the bottom line.

Positive for bottom line

Proper animal handling, in addition to being the right thing to do, is very beneficial to producers’ bottom lines. Grandin said that cortisol levels spike during poor handling, which is instrumental in causing dark cutters. A dark cutter results in higher pH levels in the meat at 5.8 or higher, whereas good-quality beef has a final pH of 5.5. The National Beef Quality Audit estimates that dark cutters cost the beef industry \$5 for every fed animal slaughtered.

Additionally, bruises are an issue to the bottom line. Grandin cited two Colorado State University studies (1992, 1995) which reported that bruises cost the U.S. beef industry \$1.00 per animal on feedlot beef, and \$3.91 per animal on cows and bulls. When behavior is used instead of force, bruises shouldn’t be an issue.

Improving animal welfare can also improve employee safety and reduce costs because calm cattle are less likely to injure staff or break equipment. Grandin also mentioned that cattle that are agitated in the squeeze chute have lower weight gains.

Ways to improve handling

It’s clear that low-stress handling is positive for many aspects, but how can it be executed on a large scale? Performing low-stress handling at home is one thing, but Grandin offered some insight on how large operations and packing plants can improve handling.

- ▶ Curves — She said that curved systems block the view of the squeeze chute. She stressed that the outer perimeter should be solid so they can’t see other cattle

doing other things. She said that animals will turn back in the same direction they came from easily, and that the chute needs to be long enough to induce following behavior.

- ▶ Shadows — Cattle don’t like strange shadows, and shadows impede movement. “Sunny days are the worst,” she added. Cattle don’t like to go into dark buildings, so adding light to the inside of the building helps progress movement through the doorway.
- ▶ Solid gates — In addition to solid outer perimeters of the chute, she also recommended a solid gate. This is so the cattle don’t see where the other cattle are going and remain calm while they are waiting.
- ▶ Non-slip flooring — It is important to have flooring that provides good footing for cattle to prevent slipping and falling. Make sure the cattle can get traction on the flooring.
- ▶ Flight zone — Knowing the flight zone and being able to use the correct amount and placement of pressure is important. When the cattle are in the chute, handlers should walk away from the area they are driving the cattle toward. The cattle will walk calmly past them. Flags can also be used to turn

cattle, creating no need for hitting cattle and creating bruises.

- ▶ Observation — “One thing I try to get through to my students is to be more observant,” Grandin emphasized. “What are the ears doing? What are the eyes doing? Is it quivering? What’s its tail doing? What is the posture of the animal? They will tell you a lot.”

Grandin shared a story that sometimes the most obvious things are what people rarely notice. Hanging chains, reflections, change in flooring, and, most often, ill-placed people create the biggest distractions and stop movement.

Treating animals with respect is an important aspect of Grandin’s system, and more research is being done across the United States and the globe. For more information about Grandin’s research or her systems, visit www.grandin.com.

Organizations like the World Organization for Animal Health (OIE) are bringing animal welfare to the forefront of the industry, but it is up to individual producers and packing plants to implement good handling techniques. By keeping the cattle stress levels low, that effect carries over to the handlers’ stress levels and an increased bottom line sure doesn’t hurt, either.

