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November-December

IS YOUR WATER SAFE?
PG. 16

WATER ACTIVITY THEN & NOW
PG. 38

IMPORTING FOOD SAFETY
PG. 40

ANIMAL WELFARE

Humane Handling in the Plant

*To Lisa
It was great doing
the story with you*



Coming to HBO Feb. 6, 2010
"TEMPLE GRANDIN"
starring Claire Danes

Through her autism, Temple Grandin (left) has gained unique insights to the thinking of animals, which she shares with participants in the in-plant segment of a PAACO/AMI auditor training/certification course.
Photos: Lisa Lupo



Animal Welfare

HUMANE HANDLING IN THE PLANT

BY LISA LUPO

Editor's Note: In her research for this article, the author spent two days with Temple Grandin, participating in the PAACO/AMI Meat Plant Welfare Auditor course, with classroom training and in-plant application at Hormel Foods, Fremont, Neb., and Cargill Beef, Schuyler, Neb.

The animal world is one of sensory detail. Of minute details that the “normal” human mind has learned to ignore in its intent to see and understand the big picture. Details such as a shadow or leaf in its path, a jacket tossed over a railing, a dark tunnel into which it is being led—all can cause an animal to balk, to turn from the route on which it is headed. And when that balking occurs among livestock at a meat-packing plant, it can have immense impact on the flow of the process and elicit a tendency in some handlers to drive the animal by any possible means.

However it is not necessary, ethical or legal to use excessive force. Rather, said renowned animal welfare scientist Temple Grandin, by understanding the animals' natural instincts and needs, plants can implement humane handling practices and

provide a peaceful path for the livestock.

With her unique insight into the animal mind, Grandin has been dubbed the voice, the conscience, the rock star, even, the god, of animal welfare. She has a special connection with them; one that “made school and social life hard, but made animals easy”: Grandin is autistic. It is this that enables her to understand their world; design to their instinctual nature, and advocate for their humane treatment.

As Grandin explained, she, like animals, thinks in pictures. “All of my thinking is completely visual. My mind works like Google for images. It’s helped me in my work with animals. Animals don’t think in language; they think in pictures.”

THINKING LIKE LIVESTOCK. Research has found that the autistic mind

tends to focus on detail instead of larger concepts. It is this focus that enables Grandin to see as animals do and correct the distractions in plants which disconcert the animals. At the start of her career Grandin would go down in the chutes to see what the cattle were seeing. Today, she uses that knowledge to assist meat packers with the efficient and humane driving of livestock from the time the animals walk off the truck through their steps into the restrainer for stunning.

As Grandin says in her book *Animals in Translation*, “Autism is a kind of way station from animals to humans, which puts autistic people like me in a perfect position to translate ‘animal talk’ into English. I can tell people why their animals are doing the things they do.”

Using her unique insights, Grandin, who holds a Ph.D. in animal science and has written extensively on animal behavior and handling, is especially renowned in the meat processing industry for her design

of humane livestock-handling facilities—being able to take credit for more than half those in use in North America.

Grandin has worked in the meat industry for more than 35 years, lending her expertise to consulting and auditing as well as design, with a goal to make the process as stress-free for the animals as possible. “Proper handling procedures are not only important for the animal’s well-being, they can also mean the difference between profit and loss.” Even putting aside moral codes of conduct, the livestock’s well-being in the last five minutes of its life has a direct impact on the quality of the meat.

As such, Grandin’s work with meat-packing plants has had two distinctive foci: efficient, animal-friendly design and humane animal handling. The two have definite overlap—the more a plant focuses on design, the easier it is to handle the livestock, lessening any excuse for force, but a plant also needs to have a commitment to animal welfare. “Engineering is only half of it,” Grandin said. “Management is the other half. You can’t fix everything with design.”

To provide plants with the expertise derived from her unique insights, Grandin authored the American Meat Institute’s (AMI) Recommended Animal Handling Guidelines for Meat Packers and Good Management Practices for Animal Handling and Stunning, which have become the audit standard.

The guidelines further the requirements of the USDA Humane Slaughter Act (HSA) of 1958 (updated in 1978, with a resolution for enforcement in 2002), containing measurable standards for animal handling from the farm through slaughter for cattle, pigs and sheep.



ANIMAL-FRIENDLY DESIGN. As critical as handling is, it is imperative to design a plant to the animals’ nature. As Grandin explained, “a lot of plant owners don’t think twice about their cattle’s environment. If there’s a problem with the herd, it doesn’t even occur to them to look at the animals’ surroundings...They don’t realize the equipment won’t work if the environment is bad.”

A question that Grandin is often asked is if livestock balk at the plant because they are afraid of death. No, she answers, they don’t know that. “What they are afraid of are things like going into the dark, chains hanging down—all these little distractions that everybody else doesn’t notice.”

So the first step in creating a design through which livestock will move smoothly is to create a good environment. Some key points from the Guidelines and PAACO training include:

- Illuminate chutes to encourage animals to enter, but avoid glare in their eyes.
- Get down in the chute to see through the animals’ eyes and eliminate visual

distractions.

Livestock may balk at shadows, puddles or any object catching their eye, from a coffee cup to a person moving. “It’s a chain reaction,” said Mike Siemens, Cargill leader, animal welfare and husbandry. “When the front one balks, every one behind it will stop and think,

‘What’s going on?’ ... If the lead animal goes, the others will follow.”

- Muffle ventilation drafts and air hissing in the faces of approaching animals.
- Use solid sides in chutes and crowd pens to prevent animals from becoming agitated by outside activity.
- Reduce high-pitched motor and hydrau-

Temple Grandin A Starring Role

1949: At the age of two, she shows classic symptoms of autism and is labeled “brain damaged.”

1986: She publishes *Emergence: Labeled Autistic*, her first of 11 books.

2010: On February 6, HBO Films debuts “Temple Grandin,” starring Claire Danes: a film on her life with autism and rise to leading designer and consultant in livestock handling.



Photo: HBO/Van Redlin

In her unassuming manner, Grandin discussed the HBO film and being portrayed by an award-winning actress. “She’s not going to look like Claire Danes anymore!” Grandin said. “She’s got these yucky teeth she has to wear to have teeth like mine; and she’s going to play me as very, very autistic in the ‘60s and ‘70s.”

Grandin spent a half day with Danes talking about autism and her work, while Danes studied Grandin’s speech and mannerisms, which she had to enlarge to portray Grandin’s early years. “Autism gradually gets better and better and better as you put more information in the database,” Grandin said. “Watching Claire Danes play me at that time was like going into this weird time machine in the 60s and 70s.”

Grandin made recommendations on the film’s script for accuracy, supervised construction of a working replica of her dip vat design, and consulted on the cattle. “I had to make sure there were no cattle slips. We couldn’t have stupid stuff like the film ‘City Slickers.’ Don’t buy Holsteins, you have to buy Angus cattle.”

The film ends with the 1970s establishment of her business, Grandin Livestock Handling Systems. But in reality, that was, in many ways, simply the beginning of Grandin’s life.

Since then, she has published 10 books, with an 11th out in January; wrote and teaches what has become the global standard for livestock handling; has designed handling facilities around the globe; and is a highly sought speaker.

Grandin has come a long way from “labeled as brain damaged”; securing her place as a star in her own right—in the meat industry and for those who travel atypical paths in life.

lic noise; avoid clanging and banging of metal—animals are very sensitive to noise. Handlers should also be quiet and calm, as yelling and arm-waving agitates animals.

- Design with the animal in mind. Cattle have a natural tendency to circle and fol-

low in a single file, thus the best movement is achieved through circular chutes with a funnel entrance into the restrainer. Pigs, however, will jam a funnel, so an abrupt entrance stops the ability to jam.

HUMANE HANDLING. “We’re going to continue to have feedlots and slaughterhouses, so the question is: what should a humane feedlot and slaughterhouse be like? Everyone concerned with animal welfare has the basic answer to that: Animals shouldn’t suffer. He should feel as little pain as possible, and he should die as quickly as possible.” (Grandin, *Animals in Translation*)

That is, in essence, the goal of humane handling and the purpose of the animal welfare audits.

The November auditor course included a fairly standard mix of attendees, said PAACO Executive Director Mike Simpson, with participants from processing plants, retailers, suppliers and government. Along with instructors Grandin, Siemens and Simpson were Glee Goodner, corporate manager of animal welfare and handling, Hormel Foods, and Ann McDonald, manager, animal welfare, Farmland Foods.

In the opening session, participants expressed their reasons for attending the course, with retailers’ comments drawing a common thread. As Walmart’s Michelle Caldwell stated, “We want to be able to explain to our customers what animal welfare is and how our suppliers do treat animals humanely.” Jack in the Box’s Sandra Spille noted, “We want to do the right thing, and we want our customers to know we are doing the right thing.”

Regular, integral aspects of the course are the plant inspections, with Hormel and Cargill having opened their doors to the training audits for several years. Similar to food safety, the meat industry sees animal welfare as a non-competitive issue. “As a group, we learn together,” said Donnie Temperly, Hormel plant manager, Fremont. “When it comes to safety and animal handling, there are no secrets.”

Cargill also welcomed the group of auditing trainees, asking that they be

completely open about anything they see. “We’re here to learn,” said Schuyler Plant Manager Steve Thompson. “There’s always information out there that we can learn from each other to help ourselves and become better within the industry.”

THE AUDIT. The leading feature of the AMI audit is that it is outcome based. For example, flooring is assessed by the number of animals that slip or fall; stunning efficiency is determined by resulting animal insensibility; restrainer handling is counted according to animal vocalization. In simple terms, “If you don’t do things right, bad things happen,” Simpson said.

Thus, the goal of the animal welfare audit is not to provide consultation or advise a plant on how to build a pen or what flooring should be used, rather it is to assess, document and report plant practices through core criteria. Equating the measurement of this criteria to the assessment of critical control points in a HACCP program, Grandin said, “You can’t measure everything in a plant, you have to figure out the few things that are important. Take falling down for example. [Animals] can fall down due to rough handling, they can fall down due to slippery flooring. Lameness is the outcome of a whole bunch of bad stuff.

“It’s an outcome measure that takes constant vigilance,” she added. “You can manage what you can measure.”

Using measurable, outcome-based criteria also keeps the audit objective. “There are relatively few things measured to cover a multitude of sins,” Goodner said. “The same score should result no matter who the auditor is.”

In addition, having measurable criteria for achieving Excellent and Acceptable

ratings allows for ongoing assessment and continuous improvement, he said, explaining, “You can anticipate the future by evaluating the past.”

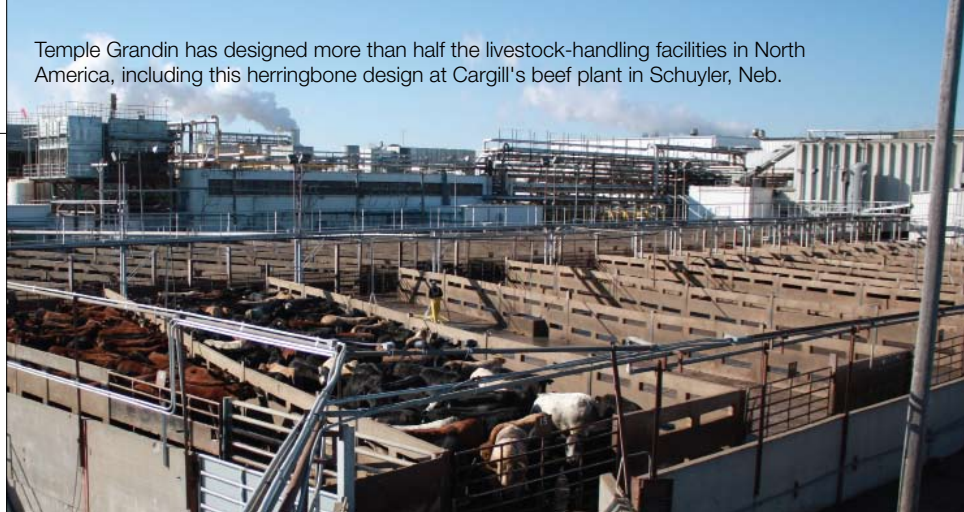
CORE CRITERIA. As such, seven core criteria are measured by minimum or maximum acceptable scores, with any incident of the last three effecting automatic failure:

1. Slips & Falls. Non-slip flooring must be used anywhere animals will walk—right to their step into the restrainer. An auditor will score slips and falls during truck unloading and in the plant, with an acceptable rate being fewer than three percent slipping, fewer than one percent falling. (Because slips are difficult to judge, an update is expected in a 2010 revision.)

2. Prod use. Electric prod use should be kept to a minimum and never be the primary tool in a plant. This can be assessed by the amount of contact with the prod, Grandin said, explaining, “When they need it, they pick it up and use it; then they lay it back down.” Other options for moving animals include plastic paddles, flags or streamers, and rattles.

3. Vocalization. Because of natural variance in behavior, vocalization criteria differs by species. Cattle may be scored in all aspects of handling, while pigs, which are naturally more vocal, are scored only in the restrainer. Sheep are not scored at all.

4. Effective stunning. With captive bolt stunning, the animal should be rendered insensible with a single shot; in electrical stunning, proper amperage and wand placement is critical. In the audit, a 99 to 100 percent one-shot rate is excellent, with 95 percent as acceptable. Vocalization during stunning or any sign of sensibility



afterward indicates improper stunning. When stunning is conducted with CO₂, similar criteria is established. “One reason effective stunning is so important,” Goodner said, “is because it’s the law.”

5. Bleed rail insensibility. “Sensibility [on the bleed rail] is zero tolerance,” McDonald said. “It’s an automatic failure.” Auditors are trained to watch for signs of insensibility—primarily loose, floppy head and neck, with tongue hanging limp and flaccid; and to check any possible signs of sensibility, such as natural eyeblink, rhythmic breathing or a righting reflex (in which the animal raises its head in an attempt to right itself). Contrary to some Internet proclamations, kicking legs are not an indication of sensibility, but are a natural spasmodic reaction. As the guidelines state, “Ignore the kicking and look at the head. To put it simply, the head must be dead.”

6. Willful acts of abuse. Purposeful abuse of any animal is against HSA regulations and constitutes automatic audit failure. Abuse may include, but is not limited to, dragging a downer (non-ambulatory animal); applying prods to sensitive parts (eyes, ears, rectum, nose); deliberate slamming of gates on livestock; and hitting or beating an animal. “If you fail an audit for a willful act of abuse, the perception is much greater,” Goodner said. “This is a pretty serious failure for most companies involved in animal handling.”

7. Access to Water. All penned animals must have accessible water; a lack of which is deemed an automatic failure.

AMI Guidelines recommend weekly internal audits and at least annual third-party audits. “Good plants can easily pass, but if they start to slip up on their procedures, they will fail,” Grandin said.

In addition to the core criteria, every audit includes secondary criteria, such as employee training on animal handling, equipment calibration and maintenance, and pen spacing. Audits of Kosher and Halal plants follow the same standards, but without the stunning scores.

THE QUALITY DIFFERENCE. While

animal welfare is the driving force behind regulations and industry guidelines, reducing or eliminating stress in animals prior to slaughter is also a meat quality issue.

“The last five minutes going up the stunning chute can wreck the meat; it can make the lactate levels go sky high and cause lots of PSE (Pale Soft Exudative Pork),” Grandin said. “The last five or ten minutes is the most critical time in handling pigs. It’s also critical in cattle. Cattle that were zapped five times with the hot shot in the last five minutes had tougher meat.”

While Grandin’s facility designs focus primarily on the animals’ natural instincts, details such as eliminating protrusions and edges also help decrease or eliminate bruising of the animal and the meat.


Because humans are less detail and sensory oriented than animals, it is critical that employees be trained on humane treatment—both for animal welfare and meat quality. Hormel requires that all employees and supplier producers, transporters and contract finishers go through Pork Quality Assurance training and/or Transport Quality Assurance training for general animal handling, with additional specific training based on the task to which each is assigned. Cargill trains its employees on animal welfare regulations and guidelines as well as Best Manufacturing Practices assembled from all its plants. In addition, Siemens said, “Cargill has established a certified animal handler training program for its employees which has been reviewed and endorsed by Temple Grandin.”

WELFARE THROUGH THE YEARS.

Grandin has seen definite improvement in her 35 years in the industry. “The 80s were especially hideous in all but a few plants,” Grandin said. Then in 1999, McDonald’s Corp. started auditing handling and stunning practices in their supplier plants, using the AMI scoring system, and Grandin saw immense improvement there and across the industry. Although there will always be plants that will buck any regulation and guideline, the vast majority are maintaining standards, and Grandin sees customer audits as having raised both food

safety and animal welfare standards.

In 1974 Grandin completed her first design project, a cattle ramp and conveyor restrainer system for Swift’s Arizona plant. With every detail designed to the animals’ natural instincts—single-file, curved lanes to fit their following and circling behavior; soft lighting to prevent dark tunnels or disquieting glare; solid sides to prevent distraction—Grandin called her first design, with what can now be seen as almost omniscient foresight from the “god of animal welfare”: the Stairway to Heaven.

“For one living thing to survive, another living thing must die. ... I do not believe that my profession is morally wrong. Slaughtering is not wrong, but I do feel very strongly about treating animals humanely and with respect. I’ve devoted my life to reforming and improving the livestock industry.” Temple Grandin. *Thinking in Pictures* 

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