

Beef Cattle Welfare Discussed

Symposium engages industry stakeholders in constructive dialogue on current and emerging beef cattle welfare issues.

by Kasey Miller & Troy Smith

The Third International Symposium on Beef Cattle Welfare (ISBCW) hosted in Saskatoon, Sask., June 5-7 brought animal scientists, veterinarians and beef cattle professionals together to discuss solutions to animal welfare issues through research, education and dialogue. The program looked at critical issues — including social concerns, production, environment, transportation, processing, marketing, trade regulations and legislation — from all angles of the beef supply chain.

Angus Journal reporters Troy Smith and Kasey Miller attended the webcast of the program to provide full coverage of the event, which is posted in the API Virtual Library (go directly to <http://bit.ly/MsqCPv> or navigate from www.api-virtuallibrary.com as follows: Meeting Sites > Other Industry Meetings > News Coverage). Proceedings of the conference can be found on the conference website, www.beefwelfare2012.ca/index.php/program.

Following are a few highlights.

Environmental Stress & Animal Welfare

According to animal scientist Terry Mader, mitigation of environmental stress means more than achieving desired cattle performance goals. The private consultant and former University of Nebraska researcher said it's a matter of ethical stewardship. Still, like many animal welfare practices, management response to weather-related stress has economic ramifications.

Stress resulting from excessive summer heat and humidity causes animal suffering and economic loss — particularly for animals in confinement. According to Mader, if there is no cool-down at night, heat stress can bring about death in two or three days. However, since most summer heat waves are of relatively short duration, Mader said lingering cold and wet winter events probably cause more severe stress.

Cold, wet weather drains body heat and increases net energy requirements. Wind and mud exacerbate the problem. Mud, said

Mader, can be a big stress factor for animals in confinement. As mud deepens, cattle expend more energy.

"With 12 to 15 inches of mud, you've doubled the net energy requirement for maintenance," stated Mader, noting how deep mud typically keeps animals from accessing feedbunks as frequently, so dry matter intake declines.

"Cost of gain mounts exponentially as mud deepens," added Mader.

Mud mitigation methods include increasing the slope of pen surfaces to enhance drainage, and allocating more pen space per animal. Providing bedding can help, too. Mader said bedding pens can decrease mud impact by 30%-70%.

Depending on bedding price and the cost of hauling it out, it may be more economical than supplying more energy as feed.

Mader noted a recent increase in use of bedded barns for

animals in confinement. He estimated construction costs at more than \$1,000 per animal

"That's about twice the cost of a conventional feedlot, but there's typically a 4% improvement in feed efficiency, year-round," said Mader. "It should break even with \$6 corn."

Turning to mitigation of heat stress, Mader said sprinkling or misting cattle with water helps the animals to dissipate more body heat. Wetting the ground can also help make

animals cooler. However, Mader advised application of water to only 10%-20% of the pen surface. Wetting more of the pen's surface area can raise humidity levels and contribute to stress. Providing shade is another alternative. Mader said some consultants recommend providing bedding in the summer to insulate animals from hot pen surfaces.

Mader noted that water intake by animals increases with the surface temperature of pens, so attention should be paid to providing ample amounts of fresh water. Adjustment to energy content of rations is another consideration during severe hot spells.

— by Troy Smith

Editor's Note: In its July edition, the Angus Beef Bulletin EXTRA reprinted with permission a University of Nebraska NebGuide providing tips for limiting heat stress in feedlot cattle. Access that guide at www.angusbeefbulletin.com/extra. The article is on the Front Page of the July edition.

Cattle Transport in North America

In discussions about animal welfare, livestock transportation tends to attract a lot of attention. It's a hot topic, according to Karen Schwartzkopf-Genswein, a research scientist with Agriculture and AgriFoods Canada. Transportation is the No. 1 issue addressed in public comments received by Canada's minister of agriculture, she noted. It's probably because cattle are transported over public byways daily, so the practice is readily visible to nearly everyone.

Consumer concern about livestock transportation conditions raises questions about pertinent regulations for safeguarding animal welfare. Schwartzkopf-Genswein said questions about Canada's 30-year-old regulations prompted the recently completed Transportation Benchmark Study. Since no applicable studies existed previously, she and other researchers hope the new data and additional planned research will help evaluate current regulations and identify areas where changes may be warranted.

Schwartzkopf-Genswein said a survey was conducted in cooperation with the cattle transportation industry to determine minimum, maximum and average loading densities, transport distances, feed and water intervals and the incidence of delays during



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— Terry Mader



Competing concepts of ethical animal use

Animal use is a hotly debated concept in many areas of the world, and Wes Jamison, Palm Beach Atlantic University, West Palm Beach, Fla., warned attendees at the 2012 International Beef Cattle Welfare Symposium against making it a moral issue. Once it becomes a moral issue, it becomes increasingly polarized, he emphasized.

Competing concepts of the ethical use of animals has stemmed from several causes, Jamison explained. Urbanization has meant more people interact with animals only as pets (and often as surrogate children), not as farm animals.

"Animals are now understood through non-consumptive, pet-centric cognition," he said.

There used to be a "double standard" in which people viewed farm animals and pets differently, he explained. They trusted science to mitigate the welfare of farm animals, because science was the privileged perspective. As long as the animals' pain and suffering was minimized, it was ok to consume them or to use them on the farm as instruments.

That double standard of different classes of animals has disintegrated, and the public has demanded that policy be changed because of it, Jamison warned. "Modern agriculture cannot exist if this trend continues."

Another factor encouraging competing concepts for ethical use of animals is the collapse of the worldview. He noted that before

the industrial revolution, there was a unified view of animals as instruments or tools. That has changed.

For instance, from his experiences in Paraguay, animals are only as good as their use. However, after the revolution, it has become a "post-modern free-for-all" through different cultures and ideals. For example, Jamison shared, for Thanksgiving dinner the traditional meal in the United States is turkey. In Laos, however, the meal of choice is puppy. There is no dominant, cohesive worldview on the role of animals.

When animal welfare is discussed as a moral issue, a consensus will never form, Jamison said. He predicted that in the United States production agriculture would flee regulations to maintain competitive advantage. Food science and genetic engineering, he said, could eventually start engineering and manufacturing meat without animals. Science is universal and pragmatic, though, and is accepted because it works. That is not an excuse to rely totally on science.

The current disarray is merely "social noise," he assured. Society always goes through conflict during culture shifts. He predicted agriculture may develop into tiered, boutique agriculture with continuing production agriculture for the poor.

Ultimately, he said, animal agriculture will endure because "animals take nature we can't use and convert it to nature we can."

— by Kasey Miller

transportation. Also reported were incidences of down, injured or dead animals, plus data that might point to relationships to type of truck, driver experience, type of cattle involved and weather conditions. Another area of interest was the amount of "shrink" cattle experienced. A total of 6,152 surveys were used in the analysis, representing some 290,000 head of cattle.

"The take-home message about shrink is that many factors have a multiplicative effect."

— Karen Schwartzkopf-Genswein

"The take-home message about shrink is that many factors have a multiplicative effect," Schwartzkopf-Genswein stated.

She said it was not surprising that length of haul and ambient temperature were significant factors. Temperatures below 15° C and above 30° C (below 5° F and above 86° F) were most detrimental.

Driving quality mattered, with the greatest shrink occurring when drivers had less than six years of experience. The time cattle were loaded onto trucks mattered, with greatest shrink resulting when cattle were loaded in the afternoon or evening.

Among different classes of cattle, calves and cull animals were most susceptible to shrink. Calves and cull cows also experience the highest number of compromised animals due to lameness, going down or death.

However, the survey suggests the incidence of mortality is very low.

A harmonization of Canadian and U.S. regulations would benefit animal welfare, Schwartzkopf-Genswein said, referring to differences in axle weight restrictions. Currently, frequent delays result when cattle must be redistributed, per trailer compartments, at the border.

Schwartzkopf-Genswein noted that studies are under way to determine the effects of ventilation relative to trailer perforation (opening) patterns. She said that between common designs featuring 12% vs. 10% porosity, evidence suggests the former design is hotter.

"We didn't expect that," admitted Schwartzkopf-Genswein. "Air flow appears to be the significant factor. We

need to do more research for designs affecting airflow."

In addition, she said research has begun regarding loading density and other factors that can affect animal welfare during transportation.

— by Troy Smith

Pain Management May Affect Market Access

Only one out of five veterinarians reported routine analgesic (pain management) use at castration, though admittedly, there are no analgesics labeled for cattle in the United States, said Hans Coetzee. The Iowa State University professor explained some of the economic benefits and research methods of providing pain management to cattle during castration.

While there is no analgesic labeled for use

in cattle in the United States, other drugs may be used extra-label, provided adherence to the guidelines in the Animal Medicinal Drug Use Clarification Act is maintained. Granted, establishing meat and milk withdrawal periods is especially challenging. Oral meloxicam is the only approved medication and the only version of meloxicam allowed in the United States.

By using oral meloxicam for pain management, producers can reap economic benefits by gaining access to more markets (like the European Union). The public believes pain management is the right thing to do, and therefore analgesic use is a good offense. Niche marketing is available because of welfare labeling such as Humane Farm Animal Care (HFAC), and pressure is reduced

from animal rights groups and possible legislative scrutiny. Pain management also maintains consumer confidence in beef.

Coetzee's research also studies whether there are health and performance benefits from pain management. The first study Coetzee shared examined performance of steers and bulls that were castrated after feedlot arrival.

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Combining changes in average daily gain (ADG), pull rates (calves pulled from pens to go to the sick pen), use of microbials, and bovine respiratory disease morbidity, the steers castrated prior to arrival earned \$52.18 per head more than the bulls castrated after arrival. On a 550-pound (lb.) calf, the \$52.18 difference comes out to \$9.48 per hundredweight (cwt.).

Another study showed results of providing sodium salicylate (aspirin) in drinking water 24 hours prior to and 72 hours after castration and dehorning. The calves that received the aspirin had significantly greater ADG, but the aspirin had a bitter taste, calves didn't like it, and they stopped drinking. Coetzee suggested looking into the effects of analgesic given prior to 24 hours before castration and dehorning.

Oral meloxicam has been shown to have a positive effect after dehorning and castration, and differences in behavior showed that calves felt better after the procedures compared to controls. Calves treated with meloxicam spent more time at the grain bunk and the control calves spent more time at the hay bunk.

Other studies have shown, he concluded, that calves without pain management will show compensatory growth later, but pain management gives more health benefits in addition to performance.

— by Kasey Miller

Lameness Is Often More Than Foot Rot

For veterinarian Chris Clark, lameness in cattle is a familiar topic. A large-animal clinician and instructor at the University of Saskatchewan's Western College of Veterinary Medicine, he commonly counsels producers and other veterinarians on that very subject. Though still a bigger problem among dairy cattle, Clark sees plenty of lame beef animals, too. Clark said that too often lameness is considered to be part of doing business — just part of what happens in the cattle business.

"That attitude is pervasive, but I don't think it's acceptable," Clark said. "It is a welfare issue. Lameness causes pain. It's incredibly obvious."

Along with the danger of complacency regarding lameness, Clark said producers often misdiagnose cases. Many just assume that a lame animal is suffering from foot rot — a bacterial infection of soft tissues of the foot that causes localized swelling, fever and pain. However, Clark said foot rot may be

responsible for fewer than 8% of lameness cases.

"Typically, foot rot is easy to treat with antibiotics. Response to treatment often is dramatic, occurring within 36 hours," Clark stated. "If it doesn't get better, it isn't foot rot."

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— Chris Clark

Clark emphasized the need to examine the animal's feet before administering treatment, to look for evidence of infection, including swelling or

lesions. If an animal is unresponsive to treatment with an antibiotic, alternative causes must be investigated. Clark cited other maladies associated with lameness, including sandcracks, thimble toes and corns, which do not respond to antibiotics. Stressing that lameness is a symptom rather than a diagnosis, Clark said producers must become familiar with potential causes.

"Education in this area is going to become a big deal. That's the way it has gone in the dairy industry," said Clark, noting an explosion of research related to lameness in dairy animals and lamenting the lack of epidemiological studies involving beef cattle.

Clark also warned that, as an animal welfare issue, the prevalence of lameness in beef cattle could be a ticking time bomb. Images of lame cattle, captured by camera phones, could become detrimental to the beef industry.

— by Troy Smith

Flight Speed and Exit Scores

Cattle disposition or temperament matters from the standpoints of safety and economics. Colorado State University graduate student Mikaela Vetter said temperament is an animal welfare issue because easily excited and flighty cattle can be a danger to themselves and herd mates when they are handled. Temperamental animals pose a risk to the welfare of human handlers, too.

Vetter said calm, easy-to-handle cattle cause far less damage to facilities. She listed other economic benefits, including enhanced

conception rates, ADG, carcass merit and general health status.

"Some stresses are unavoidable in cattle production," Vetter stated, "but the producer gains some advantage from assessing temperament and selecting for calm disposition. But they need a tool for assessing temperament — one that is user-friendly, inexpensive and reliable. Reliability is probably most important."

Vetter explained an observation-based scoring system for evaluating individual animal behavior as cattle exit a working chute — whether they walk, trot or run away. She explained how this visual exit-scoring system had been tested in comparison to exit velocity or flight speed as measured by infrared sensor. Vetter said the study also considered how these measures of temperament related to the ADG of yearling cattle involved in the research.

"Results suggest intermediary selection of animals, from the 'trot' group, may offer the greatest benefit to average daily gain, while avoiding interference with other traits," said Vetter, noting concern over potential disadvantages to selection of overly docile

"Some stresses are unavoidable in cattle production."

— Mikaela Vetter

cattle. In a breeding herd, such animals might exhibit less-than-desirable mothering ability. In the feedlot, they may be less aggressive in claiming their share of time at the feedbunk.

Vetter said the research suggests exit scoring can serve as a suitable replacement for actual measurement of flight speed, meeting the desired criteria.

"Walk-, trot- and run-scoring is an inexpensive, easy-to-use tool and allows producer confidence in the association between measurements of temperament in the economically relevant trait of gain," Vetter concluded.

— by Troy Smith



Editor's Note: To read other summaries from this conference, visit <http://bit.ly/MsqCPv> in the API Virtual Library. The conference website is www.beefwelfare2012.ca/index.php/program. The API Virtual Library is provided as a resource to cattlemen by the editorial team at Angus Productions Inc. (API), publisher of the Angus Journal, the Angus Beef Bulletin, the Angus Beef Bulletin EXTRA and the Angus e-List.