

REPORT OF THE COMMITTEE ON ANIMAL WELFARE

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The Committee met on Monday, October 16th, 2006, at the Minneapolis Hilton Hotel, Minneapolis, Minnesota. Chair Steven Halstead called the meeting to order at 1:00 p.m. with 23 committee members and at least 56 guests in attendance. Dr. Halstead notified the Committee members and guests that Vice Chair de Grassi would not be in attendance and that Dr. Carolyn Stull would be substituting during this Committee session. Dr. Halstead reviewed the activities of the Committee during and following the 2005 meeting in Hershey, Pennsylvania. Discussion included the issues of quorum status and proxy voting, both of which are to be addressed by the Board of Directors to provide clear guidance in the future. Dr. Halstead asked members to provide suggestions for future meeting agenda topics either directly to the Chair or Vice Chair or by written comment on the attendance sheets being circulated. He announced the dates and location of the 111th Annual Meeting of the USAHA (October 18-24, 2007, Reno, Nevada). Dr. Halstead then reviewed the action taken at the previous meeting before introducing the first speaker.

Marlene Halverson, Farm Animal Economics Advisor, Animal Welfare Institute (AWI), provided an update of her organization's activities and concerns. She described the recently completed and released booklet on enrichment for rodents and rabbits in research institutions, highlighted the AWI Refinement Awards by which AWI offered up to eight \$6,000 awards to North American residents for studies aimed at the refinement of the housing and handling conditions of animals assigned for research or education, discussed the Pet Safety and Protection Act that would prohibit US Department of Agriculture (USDA) Class B licensees from selling dogs and cats to laboratories, prevent stray animals (that may be lost family pets) from being sold to laboratories, allow breeders (USDA Class A licensees) to supply animals to laboratories, allow research facilities that breed animals to supply them to other research facilities, allow

registered public pounds that receive animals turned in by their owners to provide these animals to research facilities, and allow individuals to donate their own animals to laboratories for research purposes.

Ms. Halverson then reviewed the proposed federal ban on horse slaughter, which AWI believes would reduce injury and abuse to horses in slaughter market transport, the Institute's efforts to strengthen legal protection of America's free-roaming wild horses and burros, and AWI efforts to protect bison in and around Yellowstone National Park. Ms. Halverson then introduced the Christine Stevens Wildlife Award, established in recognition of the Institute's founder. Recipients of this award will receive a \$10,000 grant to defray the costs of innovative and creative research on humane, non-lethal tools and techniques for management of wildlife. Ms. Halverson concluded with comments about the Society for Animal Protective Legislation's Compassion Index, an Internet resource to provide information on how Members of the US Congress vote on measures affecting the welfare of animals and the expansion of the AWI Husbandry Program to include turkey ranch standards.

A.C. David Bayvel, Director, Animal Welfare, Ministry of Agriculture and Forestry Biosecurity, New Zealand, and Chair, World Organisation for Animal Health (OIE) Permanent Animal Welfare Working Group, provided a review of the role of the OIE and related animal welfare developments of potential strategic importance to United States Animal Health Association (USAHA).

According to Dr. Bayvel, the growth of scientific, public, political and media interest in animal welfare and ethics, during the last 50 years, has been dramatic and sustained. The subject has received recognition as a bona fide academic discipline, with an ever-expanding international peer-reviewed literature. It also now is recognized as both a domestic and international strategic marketing issue deserving appropriate attention from animal industry groups.

Dr. Bayvel's presentation reviewed some of the fundamental tensions and contrasts that characterize the policy debate surrounding the use of animals in agriculture. He described significant international trends along with a number of strategically important international initiatives. The OIE's assumption of an international animal welfare leadership role, with the full support of its 167 member countries, is one such initiative. The background to, the current status of, and future challenges faced by the OIE in discharging this role were reviewed.

Dr. Bayvel also reviewed other initiatives being taken by organizations such as non-governmental animal welfare organizations, transnational retailers, and international financial institutions. He highlighted some of the future challenges faced by the agricultural industry, policy makers, and regulators with an emphasis placed on the principles of risk management, risk communication, continuous improvement, and incremental change management. It is hoped, he said, that a debate, too often typified by polemics and polarization, will assume a more productive and positive character in the years ahead.

Dean Merrilees, Agriculture Minister/Counselor, Embassy of Australia, Washington, DC, provided a review of the animal welfare structure and strategy in Australia. This structure relies on the constitutional framework of federal, state/territorial, and local governments, with

enforcement assistance through the Royal Society for the Prevention of Cruelty to Animals (RSPCA). Australia's strategy aims to enhance the country's national approach and commitment to high standards of animal welfare by developing sustainable improvements based on science and effective communication, education and training. The strategy starts with the foundational beliefs that Australians care about animal welfare, and that animal welfare, health and production are closely linked. Drawing upon the expertise of the members of its Animal Ethics Committees and employing community consultation (frequently driven by global issues and media interest), the strategy employs legislation, model codes of practice, auditable industry quality assurance and self-regulation, and education and training. The strategy has been 5 1/2 years in the making, and applies to all Australians and all animals across six sectors: livestock/production animals; animals used for work, sport, recreation or display; companion animals; animals in the wild; aquatic animals; and animals used in research and teaching. Additional information is available through the Australian Animal Welfare Unit, Department of Agriculture, Fisheries and Forestry via e-mail: animalwelfare@daff.gov.au, telephone: 02 6272 3933, or at www.daff.gov.au/aaws.

Dr. Halstead read a letter from Dr. Ralph Knowles, Committee on Animal Welfare member and USAHA lifetime member unable to attend this year's meeting. Dr. Knowles wished to commend USDA for action taken to protect horses under the Horse Protection Act. The complete letter is included at the end of this Committee Report.

Sebastian E. Heath, Senior Staff Veterinarian, Emergency Management and Diagnostics, Veterinary Services (VS), Animal and Plant Health Inspection Service (APHIS), United States Department of Agriculture (USDA), presented a Time Specific paper entitled The Public and Animal Health Consequences of Pet Ownership in Disasters. The paper is included in these Proceedings at the end of this Committee Report.

Alice Green, Veterinary Medical Officer, Centers for Epidemiology and Animal Health (CEAH), VS, reviewed the preliminary findings of The Farm Security and Rural Investment Act of 2002 (Farm Bill) request to the Secretary of Agriculture to investigate the scope, causes, and humane treatment of nonambulatory livestock in the United States. The National Agricultural Statistics Service (NASS) collected initial cattle data on scope in 2004 and 2005; the data included number and disposition of nonambulatory cattle and calves. During 2003, 0.3 percent of beef cattle on 8.4 percent of beef operations and 1.0 percent of dairy cattle on 26.4 percent of dairy operations became nonambulatory. The National Animal Health Monitoring System (NAHMS) Nonambulatory Dairy Cattle Study was an on-farm study in 21 major dairy states using responses from questionnaires. During 2004, 78.2% of dairy operations (5 milk cows or more) in the study had nonambulatory cows. Generally, nonambulatory dairy cattle do not have a history of health problems. The top causes for nonambulatory dairy cattle include calving related injuries (22%), hypocalcemia (19%), and injuries related to slipping or falling (15%). Management repositioned only 50% of cattle that were nonambulatory from 12 hours to less than 24 hours. More than 90% of cattle that were nonambulatory for 12 hours or more were provided water, feed, and shelter. Nonambulatory cattle that remain recumbent for 6 hours or more generally have a poor prognosis. Less than 20% of nonambulatory dairy cattle recovered and remained in the herd.

Gail Golab, Associate Director, Animal Welfare Division, American Veterinary Medical Association (AVMA), delivered an update on AVMA activities. AVMA has identified five critical issues for focus—animal welfare, economic viability, veterinary workforce, veterinary education, and veterinary services—with strategic goals developed for each. The six strategic goals for animal welfare include 1) positioning AVMA as a leading authority and authoritative, science-based resource, 2) developing core values and principles to guide policy development, 3) ensuring that all audiences are aware of the essential role that veterinarians play in protecting animal welfare, 4) ensuring that veterinarians are knowledgeable about the science and ethics of animal welfare, including its historical, political, and social constructs, 5) working toward a consistent legal status for animals in all states that is consistent with AVMA policy, and 6) ensuring that the association has the needed infrastructure to anticipate and proactively address related emerging issues.

A variety of leadership bodies have been called upon to assist the AVMA in accomplishing its goals. These include the Animal Welfare Governance Task Force, the Animal Welfare Advisory Committee (a task force charged with articulating overarching animal welfare principles for the veterinary profession), the Animal Welfare Committee (a standing AVMA committee), and the Animal Welfare Division (scientific and administrative staff support). To date, all AVMA governance structures have been reviewed, the composition and charge of the Animal Welfare Committee has been revised, and a new operational Division has been established. The Animal Welfare Advisory Committee has developed a draft set of overarching principles, which will be considered for adoption by the Executive Board during its November 2006 meeting.

Other notable animal welfare-related activities occurring during the past year at the AVMA include adoption of a resolution by the AVMA House of Delegates reaffirming that responsible use of animals for human purposes is consistent with the principles of the Veterinarian's Oath, transfer of responsibility for the AVMA Guidelines on Euthanasia from the Council on Research to the Animal Welfare Committee, and approval of maceration as an acceptable approach to the disposal of chicks, poults, and pipped eggs. The House of Delegates disapproved a resolution opposing foie gras production (AVMA has taken no position on this issue) and a resolution encouraging the AVMA to consistently place animal welfare above economic considerations was referred to the Animal Welfare Committee for further review and discussion.

Vaughn Langman, Research Biophysicist in Animal Care, APHIS, delivered a Time Specific paper entitled The Biophysics of Acclimatization, Thermal Comfort Zones, and Disease. This paper is included in these Proceedings at the end of this Committee Report.

Tim Cordes, Equine Programs Coordinator, VS-APHIS-USDA, provided a report on the phase-out of double-deck trailers used for commercial transport of equid to slaughter. The 1996 Farm Bill gave the Secretary of Agriculture authority to regulate the humane and commercial transport of horses intended for slaughter. The position of the USDA-APHIS-VS Slaughter Horse Transport Program has been consistent: If a horse must be transported commercially to slaughter, then it will travel in a safe and humane fashion. The establishment of the program was a collaborative effort of the public and private sectors and included input from animal welfare groups and research groups on animal handling, stress, and transportation. A working group was convened to include the APHIS-VS, Agricultural Marketing Service (AMS), Food Safety and

Inspection Service (FSIS), and Office of General Council (OGC). Stakeholder meetings were convened to include participants from the equine industry, horse welfare groups, veterinary communities, auction terminals, slaughter horse plants, trucking industry, and research communities. Colorado State University performed research on the physical conditions of horses upon arrival at slaughter plants, Texas A&M University conducted research on the effects of water deprivation, and the University of California, Davis researched stress in equids shipped to slaughter facilities. The stakeholders and researchers agreed upon the following minimum requirements and offered them for the proposed rulemaking process:

- Separate stallions and other aggressive horses from the rest of the shipment.
- Provide adequate food, water, and rest six (6) hours prior to loading onto vehicle.
- Confine horses in a vehicle no longer than 24 (+4?) hours without food and water.
- Use owner/shipper certificate.
- Provide adequate floor space.
- Phase out two-tier trailers.

The *Federal Register* published the final rule on humane transport of horses to slaughter (Docket No. 98-074-2) on the 7th of December 2001 with 90 days to fully implement or by the 7th of March 2002. This final rule included a five (5)-year phase-out of two-tier conveyances. Therefore, the moratorium on double-deck trailers officially ends this December 7th, outlawing the transport of horses to slaughter in any rigid two-tier conveyance at that time. Research studies funded by USDA for the program support the need for this regulation because of injuries associated with such conveyances.

Carolyn L. Stull, Animal Welfare Program, School of Veterinary Medicine, University of California, Davis, completed one particularly valuable study on responses of horses to trailer design, duration, and floor area during commercial transportation to slaughter. In her research, 306 horses in 9 loads were evaluated. Five (5) loads were transported in straight deck trailers. Four (4) loads were transported in potbelly or double-deck trailers. The duration of travel was from 5 hours and 55 minutes to 30 hours. The distance traveled was from 370 to 1550 miles. All loads were transported to Beltex, Inc. in Fort Worth, Texas. Horses originated from California, Pennsylvania, Kentucky, and Texas. Transportation was performed under hot and humid summer conditions. Horses identified for slaughter were all assembled at feedlots, auction or sales facilities, and by private brokers. Both physiological and pathological data were recorded prior to loading and upon arrival at the processing plant. The data clearly demonstrate the deleterious effect two-tier shipping has upon horses with total injuries by trailer type reported as 29.2% in potbellies and 8.0% in straight decks. The data also indicate that the head and face was the most likely area for injuries as compared to the legs or body areas. There were 81 injuries in a total of 60 horses, and 58% of all injuries occurred on the face or head area. This increase in injuries with potbelly trailers was attributed to the dimensions of the ramps and doors, crowding, more maneuvering during loading and unloading, and the ceiling height.

Following Dr. Cordes' presentation, the Committee moved to its business session to consider three resolutions. The first, calling for state governments to enact and enforce regulations that are consistent with the ban of double-deck trailers in the commercial transport of equids to slaughtering facilities, was supported by the Committee. On the subject of tail docking of dairy cattle, the Committee also supported a resolution. The third resolution on the subject of tail

docking of dairy cattle, was not moved for support and no further action was taken. The two resolutions were forwarded to the Committee on Nominations and Resolutions.

**Letter To Committee Chair
Ralph Knowles, DVM**

Dr. Steven L. Halstead
Chairman, Committee on Animal Welfare, US Animal Health Association

Dear Dr. Halstead [Steve],

Recently, I read USDA-APHIS-VS's press release disclosing that the Tennessee Walking Horse (TWH) National Celebration had been "shut down" because of the exhibiting of sore horses (Credit line to Chester A. Gipson DVM). This prohibition of an exhibition of Tennessee Walking Horses was very gratifying to me.

Prior to the enactment of The Horse Protection regulations (under the Animal Welfare Act) USDA had no authority to levy sanctions on "sored" horses of any breed. However, as Chief Staff Veterinarian, I traveled to Shelbyville, TN to observe (prior to The National TWH Celebration) horses stabled on the exhibition grounds. Among the 1,800 horses stabled there approximately 600 horses were so sore (in the pastern area) that they were lying down in their stalls.

In about 1977 or 1978 the late Senator Tydings (Maryland) held a hearing on the TWH "soring" situation. During that hearing a horse owner from Tennessee said, "Senator, all of the bad people are not from Tennessee. In the shadow of this building (the Senate Office Building) you will have "sore" horses at the international show." Senator Tydings said, "No, we will not."

A letter from Thomas Flannery (US Attorney for the District of Columbia (DC)) was received in Hyattsville, MD, requesting that the USDA inspect horses offered for exhibition in the International Horse Show. The DC humane code mandates that any animal that is found to be inhumanely treated can be confiscated. No horse owner was going to test the DC humane code, so many entries were withdrawn prior to the show.

Subsequently the Horse Protection Act was issued (1979), and while the infrared thermograph was a deterrent to "soring," it is gratifying to know that chemical detection of substances applied illegally to horses offered for exhibition can be used to shut down horse shows.

I commend USDA for taking such action.

Regards,

Ralph C. Knowles, DVM

The Public and Animal Health Consequences of Pet Ownership in Disasters
Sebastian E. Heath
Emergency Management and Diagnostics
Veterinary Services

In two epidemiologic studies of evacuations from disaster, risk factors for household evacuation failure, pet evacuation failure, and pet rescue attempts were characterized. A random digit dial telephone survey was conducted of 397 households in Yuba County, California, where residents were under an evacuation notice due to flooding. A mail survey was conducted of 241 households in Weyauwega, Wisconsin, where residents evacuated from a hazardous chemical spill. Risk factors were identified using multivariate logistic regression. Case households were defined as those which either failed to evacuate as a unit, evacuated but without their pets (dogs or cats), or evacuated without their pets and later attempted to rescue their pet. Control households were those that evacuated as a unit, evacuated with their pet, or evacuated and did not attempt to rescue their pet.

In the flood, the proportion of households with and without children that failed to evacuate was 25.8% and 45.9%, respectively. The proportion of households with and without pets that failed to evacuate was 20.9% and 16.3%, respectively. The risk of household evacuation failure was lower in households with children compared with households without children [OR (odds ratio) 0.4; CI (95% Confidence Interval) 0.2 - 0.8]. The risk of household evacuation failure was increased in pet-owning households without children compared with pet-owning households with children (OR 1.3; CI 1.0 - 1.5); the more pets owned, the higher the risk of household evacuation failure. All households surveyed had evacuated from the chemical spill.

Twenty percent and 50% of pet-owning households that evacuated from the flood and chemical spill respectively failed to take their pets. In both evacuations, dog, but not cat, evacuation failure was associated with a decreased pet attachment and commitment score, and dogs that lived outdoors. Cat evacuation failure was twice as likely to occur as dog evacuation failure, and was associated with not having a cat carrier.

More than 80% of persons who re-entered the evacuated areas did so to rescue their pet after initially failing to evacuate with their pets.

Household evacuation failure, pet evacuation failure and attempts to rescue a pet appear to be common concerns arising in disasters, and all are related to pet evacuation failure. Significant impediments to pet evacuation included owning multiple pets, owning outdoor dogs, or not having a cat carrier. Pre-disaster planning should, therefore, place a high priority on facilitating pet evacuation.

The Biophysics of Acclimatization, Thermal Comfort Zones and Disease

***R. Flynn**

***V.A. Langman**

S. Langman

***Animal and Plant Health Inspection Service**

United States Department of Agriculture

The thermal neutral zone and heat balance in mammals have been measured in the laboratory for more than 60 years. These measurements were either impractical or impossible to measure outside the laboratory. Recent advances in thermal technology have made it possible to make these measurements non-invasively in the field. This study was based on a single hypothesis, that the thermal neutral zone represents ambient conditions where the heat gain by an animal equals the heat loss. The hypothesis was that the heat gained from metabolism (M) and shortwave and longwave radiation (Q_a) should equal the heat loss by longwave radiation from the skin or coat surface (Q_r).

If $M + Q_a = Q_r$, when animals are within their thermal neutral zone, they are not using any other heat loss or gain mechanisms to maintain a heat balance. To test this hypothesis, we based the thermal neutral zone on changes in ambient longwave and shortwave radiation over a range of ambient air temperatures. The working hypothesis stated that using radiation exchanges between the animal and the environment a series of measurements could quantify the thermal comfort zone of a species in a wide range of situations. Using a Mikron radiometric thermal imager and a series of shortwave sensors, the working hypothesis was tested on captive species in outside and inside enclosures. Using the working hypothesis the thermal neutral zone was quantified in a wide range of species. The data also were used to measure the insulation, thermal conductance, and acclimatization of these species. This study has created several new testable hypotheses on thermal finger printing diseases and making biophysics measurements that would apply to architectural design and building materials for captive enclosures.