



# Veterinary Research News

## News Updates

### Developments continue in recall of pet food

The massive recall of pet food that began in March was still expanding in May.

The string of recalls began after dogs and cats that ate certain pet foods developed kidney failure. The Food and Drug Administration then found adulterants in ingredients from China. The agency also learned that hogs and chickens ate some of the pet food. Even as the situation unfolded, Congress started to hold hearings regarding the recall.

The FDA found that melamine and cyanuric acid had adulterated wheat gluten and rice protein concentrate from China that went into pet food. Royal Canin detected melamine in corn gluten from China that went into pet food for the South African market, according to media reports. The FDA decided to detain all vegetable protein products coming from China.

At the same time, University of Guelph researchers said they found that melamine and cyanuric acid can react to form crystals. Furthermore, the chemical composition of the crystals they created was identical to the composition of crystals from animals that ate some of the pet food in question (see next two stories).

At press time in early May, the FDA was investigating the theory that someone adulterated ingredients on purpose, among other possibilities. Adding melamine to an ingredient could increase the protein reading during chemical analysis.

About 6,000 hogs and as many as 3 million broiler chickens also ate some of the pet food now subject to a recall, but the FDA and Department of Agriculture have found no evidence of harm to humans in association with meat from the animals.

The agencies stated that hogs in California, Kansas, New York, North Carolina, South Carolina, and Utah ate some of the pet food in question. Chickens on about 38 farms in Indiana, including eight farms with 100,000 breeder chickens, ate byproducts of the pet food. The FDA and USDA continued to investigate additional sites.

A few hundred hogs and most of the broiler chickens already had gone to market, but no recalls of pork or poultry products were in effect at press time. The USDA is not approving any more meat from hogs or chickens that ate the pet food.

In April, the Senate and the House of Representatives held subcommittee hearings relevant to the recall of pet food.

The Senate Subcommittee on Agriculture, Rural Development, Food and Drug Administration, and Related Agencies—within the Appropriations Committee—held a hearing in mid-April specifically about the recall of pet food. Veterinarians and other witnesses offered varying perspectives on the food safety system, oversight of pet food, and manufacturing practices.

The experts said they could not have foreseen that melamine might adulterate ingredients in certain pet foods—or that melamine or an accompanying agent might contribute to kidney failure in cats and dogs. In hindsight, though, some legislators believe regulations and response still could have been better.

The House Subcommittee on Oversight and Investigations, within the Committee on Energy and Commerce, held a hearing in late April regarding the ability of the FDA to ensure food safety. Witnesses testified about recent recalls of human and pet foods.

More details emerged during the hearing about the events leading to

the major recall of pet food, about the importation of ingredients from China containing melamine, and about the possibilities for improving surveillance of animal health.

The May 15 and June 1 issues of *JAVMA News*, online at [www.avma.org](http://www.avma.org), offer more in-depth articles about the congressional hearings, the adulteration of ingredients, and the farms' use of pet food.

### Specialists confer about the pet food recall

On the last day of April, several dozen epidemiologists, laboratory diagnosticians, clinical nutritionists, toxicologists, pathologists, and other veterinary specialists held a conference call to provide a forum for discussion of the animal health aspects of the pet food adulteration and recall.

Participants were primarily from the Food and Drug Administration, American College of Veterinary Internal Medicine, American Association of Veterinary Laboratory Diagnosticians, and Veterinary Information Network. The call was arranged by AVMA staff to facilitate dialogue among these principals, and to identify any new guidance that could be offered to veterinary practitioners treating patients that became sick after eating adulterated pet food.

Although no new treatment protocols were recommended, several important points were underscored for communication to veterinary practitioners. In particular, the participants agreed that the standard treatment for renal failure, consisting of fluid therapy and supportive care, seems to be effective in many affected animals. Also, there currently is no evidence that acidifying or alkalinizing the urine will help to dissolve the crystals in vivo.

Dr. Neal Bataller, director of the Division of Compliance, FDA Center

for Veterinary Medicine, characterized the problem as resulting from a triazine- or melamine-related compound. The current thinking is that a combination of chemicals—each alone, seemingly nontoxic—forms polymers in the animal, and the resulting crystals do physical or other damage, primarily to the kidneys. Melamine and cyanuric acid-related compounds have been shown to cause crystal formation in vitro and perhaps in vivo, Dr. Bataller said, but further studies may identify additional substances as well.

Besides recognizing the type of crystal involved, veterinarians should be aware that formalin dissolves these crystals. Therefore, formalin may not be the best fixative for samples collected from affected animals, although preservation of tissues in formalin for overnight delivery to a laboratory may be acceptable, and some samples should be preserved in formalin for other pathologic studies. The AAVLD provides suggestions for sample collection in the article (see next column) "AAVLD issues proposed protocol for testing dead animals with nephrotoxicosis possibly associated with adulterated pet food," which is also posted at [www.aavld.org](http://www.aavld.org); click on News and then on "Protocol for suspected pet food associated nephrotoxicity."

Another point that Dr. Bataller clarified is that recall of a particular pet food does not necessarily mean that food has been associated with any animal harm. The FDA considers a pet food as adulterated if either compound—melamine or cyanuric acid—is found at a quantifiable level, regardless of any association of the pet food with reports of possible animal injury.

#### **AAVLD issues proposed protocol for testing dead animals with nephrotoxicosis possibly associated with adulterated pet food**

*The American Association of Veterinary Laboratory Diagnosticians issued the following protocol April 17.*

If possible, serum and urine should be taken antemortem for a chemical analysis and urinalysis, including sediment examination. Typical crystals should be birefringent with

polarized light. Information regarding the pet food involved—such as brand, lot number, and UPC—should be recorded. Samples of all food should be held by the client, the attending veterinarian, or the diagnostic laboratory.

A standard necropsy should be performed, using the judgment of the pathologist/veterinarian in charge, with particular attention paid to the urinary system. Photographs of pertinent lesions are recommended.

Samples of all important organs should be preserved in fixative. Lung, heart, liver, spleen, kidney, urinary bladder, adrenal gland, pancreas, thyroid/parathyroid glands, ileum, and brain are suggested, but others may be needed, depending on the lesions observed. Sections should be no thicker than 4 mm and fixed at fixative:tissue ratio of 10:1. In addition, samples of kidney, liver, fat, and urine should be taken, frozen, and held for future testing when a specific toxicologic assay is developed (as much tissue as is practical should be frozen and saved). If possible, sections of kidney should also be preserved in 100 percent (absolute) ethanol and/or snap-frozen in OCT medium to preserve crystals that might be washed away by prolonged formalin fixation.

All fixed tissues should be processed and embedded in paraffin within one to two days of fixation to best preserve crystal integrity. Routine H&E stains appear adequate to demonstrate crystals and renal tubular lesions, though Gomori's silver stain or polarized light may be used to highlight the crystals. Crystals can be viewed with or without staining on frozen or fixed sections.

Testing for other possible causes or contributing diseases should also be pursued, as a substantial proportion of the cases appear to be multifactorial. Examples include parvoviral enteritis, chronic tubulointerstitial disease, lymphosarcoma, or ethylene glycol toxicosis.

Questions or comments may be directed to Dr. Dalen W. Agnew, Diagnostic Center for Population and Animal Health, Michigan State University, 4125 Beaumont Road, Lansing, MI 48910-8104; phone, (517) 432-5806; [agnewd@dcpah.msu.edu](mailto:agnewd@dcpah.msu.edu).

#### **Infectious disease center increases public health impact**

The Department of Health and Human Services recently announced the reorganization of the Coordinating Center for Infectious Diseases, part of the Centers for Disease Control and Prevention. The new organizational structure comprises four national centers and two consolidated organizations designed to provide services across all four new centers.

"With this approval, CDC's major reorganizations are complete, and we are now in a much better position to prevent infectious diseases and to respond to national and international emerging threats," said Julie Gerberding, MD, director of CDC, in a prepared statement.

The CCID's new structure now includes the National Center for Zoonotic, Vector-Borne, and Enteric Diseases, directed by Dr. Lonnie J. King, who is the first veterinarian to be director of a center at the CDC. Dr. King is a former dean of the Michigan State University College of Veterinary Medicine.

The other centers are the National Center for Immunization and Respiratory Diseases, directed by Rear Adm. Anne Schuchat, MD; the National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, directed by Kevin Fenton, MD; and the National Center for Preparedness, Detection, and Control of Infectious Diseases, directed by Rima Khabbaz, MD.

In addition, the two consolidated organizations that provide service across CCID are the Strategic Business Unit and the Strategic Science and Program Unit.

"Our CCID fundamental mission has not changed; it will always be about improving public health by preventing infectious diseases," said Rear Adm. Mitchell L. Cohen, MD, director of CCID, in a prepared statement. "But we are very pleased that through this reorganization, we now have a much stronger alignment of our people and resources to increase our efficiency and impact on public health."

To learn about the roles of each part of the CCID structure, view the CDC statement [HHS Makes CCID](#)

Organization Official online at [www.cdc.gov/news](http://www.cdc.gov/news).

## From the AVMA

### New AVMA initiatives move forward

More than 150 agenda items underwent Executive Board scrutiny, April 12-14 at AVMA headquarters in Schaumburg, Ill. Dr. James O. Cook of District V, Lebanon, Ky., chaired the meeting.

On recommendation from AVMA President Roger K. Mahr, the board approved the establishment of a One Health Initiative Task Force. The task force was charged with articulating a vision of one health that will enhance the integration of animal, human, and environmental health for the mutual benefit of all.

The task force will identify areas where such integration exists and where it is needed, potential barriers or challenges to such integration, and potential solutions to overcoming barriers or meeting challenges.

The task force will consist of 12 influential individuals who have an appreciation for the one-health concept and who are "excellent communicators, collaborators, and forward thinkers" from health science professions, academia, government, and industry. The board will be presented with a written report from the task force, detailing its findings along with recommendations.

Dr. Mahr has long been an advocate of the one-health concept. In his address to the AVMA House of Delegates this past July, he presented his vision for a national one-health initiative uniting veterinary and human medicine, with the goal of improving and protecting animal and public health worldwide.

Also of note, the AVMA is supporting the concept of a national institute promoting companion animal and equine research. The board members approved the idea recommended by the AVMA Council on Research for the Institute for Companion Animal and Equine Research, which the council says is a first step toward meeting a crucial need.

According to the COR, funding

for health-related research dedicated to companion animals and horses is virtually nonexistent in comparison with research funding for human and livestock animal health. The \$16 million annual national investment in companion animal and equine health research is estimated to be less than 0.12 percent of the annual gross sales of \$13 billion by bio-pharma and companion animal food industries in 2005, the council stated.

The concept is for an institute that would, among other things, recommend and coordinate veterinary medical research; identify and recommend strategic alliances among groups within and outside of veterinary medicine, to support and encourage research that advances animal and human health; and provide recommendations on research policies and priorities. The council believes that the proposed concept statement provides an excellent first step in responding to the nation's crucial need for increased companion animal and horse health research.

In addition, the board approved a recommendation that the AVMA Membership Directory & Resource Manual be published and distributed biennially, instead of annually, beginning in 2008.

Earlier this year, a new online AVMA Membership Directory was made available on the AVMA Web site at [www.avma.org/myavma](http://www.avma.org/myavma). Once logged in, AVMA members may search the directory through a wide variety of search criteria. The directory is updated regularly. The AVMA Member Services Committee, which submitted the recommendation, recognizes the value of the print directory and noted that biennial publication will allow members who don't have access to the Web site, or do not wish to use it, to use a print or CD-ROM version.

## Reports Released

### Paper examines transgenic livestock in treatment of human disease

The Council for Agricultural Science and Technology (CAST) on May 14 released a new issue paper, "The role of transgenic livestock in the treatment of human disease."

A six-member task force wrote and reviewed the paper, sixth in a CAST series on Animal Agriculture's Future through Biotechnology.

According to the task force, transgenic livestock have the potential to produce new medications for the treatment of human disease—either through direct production of recombinant proteins, including biotherapeutic proteins and antibodies, or through development of new animal models for studies of human disease.

The issue paper covers these topics:

- methods of transgenic animal production, including pronuclear microinjection and somatic cell nuclear transfer
- recent developments in gene transfer, including gene targeting and transchromosomal technology
- transgenic animals as disease models for development of new treatments
- transgenic livestock as producers of new medications—via biopharming, bioproducts from milk, and bioproducts from serum
- economic and regulatory issues
- societal issues
- an in-depth description of somatic cell nuclear transfer

The paper concludes that education regarding the advantages and challenges of transgenic livestock is the key to public understanding of the issue.

The full text of the paper, Issue Paper No. 35, is available on the CAST Web site at [www.cast-science.org](http://www.cast-science.org). The paper is available in hard copy for \$5 by contacting the CAST office at (515) 292-2125.

The AVMA is a member of CAST, an international consortium of scientific and professional societies. The council assembles, interprets, and communicates scientific information about agriculture.

## The Veterinary Community Grateful clients contribute funds to veterinary colleges

Scroll through the latest news releases from veterinary colleges and

schools, and there's a good chance at least one article will report a donation from a grateful client of the teaching hospital.

One of the most recent high-profile donations came from Roy and Gretchen Jackson, owners of Barbaro, who donated \$3 million to the University of Pennsylvania School of Veterinary Medicine in February.

This type of donation has become a larger portion of veterinary colleges' annual private fundraising revenue, experts say, accounting for a small but crucial portion of income.

According to the 2005-2006 Association of American Veterinary Medical Colleges' Comparative Data Report, the mean revenue for U.S. colleges of veterinary medicine was approximately \$56 million. Just less than \$2 million of that came from gifts for current use. Statistics were not available on what portion of the gifts was from appreciative clients.

Veterinary colleges reported several opinions as to why donations have increased. For example, the growing influence of the human-animal bond and the establishment of official, grateful client-type programs at many veterinary colleges have facilitated donations.

### **Cornell appoints Kotlikoff as dean**

Cornell University has named Dr. Michael I. Kotlikoff as dean of the university's College of Veterinary Medicine, with a five-year term beginning July 1. He will succeed Dr. Donald F. Smith, who is returning to the faculty after a 10-year deanship.

Dr. Kotlikoff is chair of the

college's Department of Biomedical Sciences and director of the Core Transgenic Mouse Facility. He also has chaired the Provost's Cornell Local Advisory Committee and the Mammalian Genomics Initiative. He has served on the Cornell Genomics and Life Sciences Task Force, the Cornell Institute for Biotechnology and Life Science Technologies Scientific Administrative Board, and the Cornell Neurosciences Steering Committee.

As dean, Dr. Kotlikoff will be the chief academic and administrative officer of the veterinary college, which has approximately 265 faculty, 680 staff members, 320 veterinary students, and 145 graduate students.

Previously, Dr. Kotlikoff was a professor at the University of Pennsylvania School of Veterinary Medicine. He chaired the school's Department of Animal Biology and directed the Center for Animal Transgenesis and Germ Cell Research. He also held a joint appointment in the School of Medicine.

Dr. Kotlikoff graduated from the University of Pennsylvania in 1981.

### **Klausner joins Animal Medical Center, leaves U of M**

Dr. Jeffrey S. Klausner, dean of the University of Minnesota College of Veterinary Medicine since 1998, was appointed president of the Animal Medical Center in New York. He will assume his new role July 1.

With over 50,000 patient visits



Dr. Michael I. Kotlikoff

per year, the Animal Medical Center is New York City's largest veterinary hospital. Founded in 1910, the nonprofit center has 87 veterinarians on staff.

Under Dr. Klausner's tenure as dean, the U of M veterinary college's budget increased from \$44 million to more than \$70 million, and research expenditures rose more than 10 percent as a result of substantial increases in funding from the National Institutes of Health and the Department of Agriculture. Also under his guidance, private gift giving more than doubled, enabling the creation of an endowed chair in comparative oncology and increasing the number of student scholarships.

Dr. Klausner joined the faculty at the U of M as an assistant professor in 1977. He received his DVM degree in 1972 from the University of Georgia College of Veterinary Medicine. He is a diplomate of the American College of Veterinary Internal Medicine. His research interests include prostatic neoplasia, immunoabsorptive therapy in canine malignancy, transfusion medicine, and informatics. Dr. Klausner has served on the board of the Minnesota VMA and participated in the AVMA Council on Research.

Dr. Klausner will succeed Dr. Guy L. Pidgeon, a former AVMA Executive Board member, who resigned as AMC director in early 2006. Gleniss Schonholz has served as interim president of AMC while a national search was under way.



Dr. Jeffrey S. Klausner