

Equine HEALTH REPORT

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Human Bone Cement Works with Horses

A biodegradable magnesium phosphate bone cement that is being investigated to repair human fractures may be a valuable veterinary tool for horse fractures. A recent study at The Ohio State University compared two bone repair cements—the new magnesium cement and a calcium phosphate cement currently used in humans—and found that the magnesium cement was effective in holding in place a broken piece of horse bone and outperformed the calcium cement in the ability to keep the piece of bone in place and to accelerate bone formation at the fracture site.

"The demise of Barbaro struck all of us," states Dr. Alicia Bertone, principal investigator of the OSU research team. "Barbaro might be alive had his fractured leg healed more rapidly and avoided the destructive laminitis that occurred on his good leg. This has intensified the interest in identifying a bone cement that would help the equine community and potentially accelerate bone repair."

"Our research team was aware of the magnesium bone product and the calcium bone product used on the human side and decided to investigate if either or both

worked on the animal side. The company marketing the magnesium product, Bone Solutions, Inc., hopes to market the product for use with animal fractures. The product is currently under FDA review as a bone void filler for use in people."

The OSU study involved replicating a wedge fracture in the second and fourth metatarsal bones of clinically normal horses—a total of 32 osteotomies—and then replacing the triangular fragments using the magnesium cement, the calcium cement or nothing. Radiographs were taken of the osteotomies at regular intervals during the seven-week healing period. The metatarsal bones were examined using computed tomography (CT) and bone histology for adverse reactions and for signs of healing

and callus formation.

Study results showed that, when compared to either calcium cement or no treatment, fragments affixed with the magnesium cement were significantly closer to the parent bone during all stages of healing. Mature woven bone and fibrous tissue were also more abundant in the sites treated with magnesium, indicating that healing was occurring.

Additionally, the magnesium cement outperformed the calcium cement when it came to remaining at the fracture site. Magnesium cement stayed at the site 94 percent of the time while calcium cement persisted in only 25 percent of the treated frac-

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Foal Rib Fractures May Be More Common

Rib fractures in foals may be occurring more frequently than previously thought. That's the conclusion of a University of Montreal study. The study also revealed that ultrasonography is more effective than radiography for detecting rib fractures in foals.

During physical, radiographic and ultrasonographic examinations on 29 Thoroughbred foals admitted to an emergency unit for reasons other than thoracic trauma, researchers found that 69 percent (19 animals) had at least one rib fracture.

Fillies had almost twice as many fractures than colts, and fractures were often occurring on the left side. Researchers believe these variances are due to the difference in thoracic cage flexibility between

genders and positioning during parturition.

Although X rays showed some foals without a fracture, ultrasonography revealed a different story. The more sensitive technique found fractures in 82 percent of the foals that looked normal on X rays. Moreover, ultrasonography enabled researchers to identify additional rib abnormalities not visible on radiographs.

Researchers contend that ultrasonography justifies its routine use, calling it the "gold standard" technique in diagnosing rib fractures in neonatal foals.

For additional information about this University of Montreal study, check out the March 2007 issue of the *Equine Veterinary Journal*. ●

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New NAIS Report Highlights Lessons Learned from 2004 Pilot Projects

In the Spring issue of the NIAA *Equine Health Report* we carried an article on outbreaks of Equine Herpes Virus 1 (EHV 1) and mentioned that an outbreak had occurred at press time in Northern Virginia and we would report on it in the next issue.

That outbreak resulted in the deaths of five horses in Virginia and Maryland. During the outbreak, Virginia imposed a two-week hiatus on horse shows and sales, and many groups took private action. For example, the Virginia Masters of the Fox

Hound Association asked all of the 20-plus hunts in the state to suspend hunting for about four weeks.

By March 29, a little more than a month after the initial diagnosis, all exposed or possibly exposed horses were released from quarantine, and normal equine activities resumed.

For detailed information see the University of Kentucky's Gluck Center report, "Demystifying Neurologic Herpes" in its April 2007 *Equine Disease Quarterly*. It is available at www.ca.uky.edu/gluck/index.htm.

Clifford Reports NAIS Progress to NIAA ID Committee

The U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) Veterinary Services Deputy Administrator Dr. John Clifford, said the implementation of the National Animal Identification System (NAIS) was making "excellent progress," citing the fact that nearly 380,000 (397,000 as of June 8, 2007) premises had been registered and 14 animal tracking databases (ATDs) and an animal identification numbering (AIN) system are in place.

Dr. Clifford opened the program for the Animal Identification and Information Systems Committee meeting at the NIAA annual meeting in Sacramento in early April.

Dr. Clifford reported that a grant had been awarded to the National Pork Board to register swine premises (see story on page 3) as part of a \$6 million fund established for non-profit organizations to conduct premises registration, outreach and education. He encouraged other organizations to apply for grants at www.grants.gov.

He also noted that a Tribal Premises Registration System is now available.

Official ID devices have been defined by USDA, according to Dr. Clifford, with "minimum performance standards and must have on it an AIN, the U.S. Shield and the words 'Unlawful to Remove' imprinted on each

device." In addition, radio frequency identification (RFID) devices are allowed.

Regarding RFID devices, he said, "The USDA retains its policy of being 'technology neutral' and relies on industry to recommend ID methods, performance requirements and technology standards."

Dr. Clifford said that APHIS was in the process of printing specifications for sow tags for swine producers and that the Equine Working Group had recommended RFID devices using ISO 11784/85 standards. Also, manufacturers' applications for RFID injectable transponders for use in horses are now being accepted.

While Dr. Clifford emphasized that APHIS will participate in industry initiatives to facilitate standards for emerging, developing technologies, he also discussed one of the oldest technologies used for animal ID. "Brands have always been a part of animal ID in this country. They are often an asset to our disease eradication programs such as tuberculosis and brucellosis, and they will continue to be," Dr. Clifford declared. He said that an official Branding Group had been established and is working to develop how that system can be adopted for NAIS purposes.

Dr. Clifford also reported on the status of the private and State Animal Tracking Databases (ATDs) and USDA's Animal Trace Processing System (ATPS). Working with states and industry, USDA developed the ATPS which establishes the communication and messaging system with the ATDs for animal health officials to use in disease events when animal movement data is needed. In addition, states and industry collaborated on the development of the technical specifications for integration of ATDs with the ATPS. USDA released a document outlining those technical specifications on February 1. USDA is now establishing formal cooperative agreements with interested organizations whose

systems meet the technical requirements.

He concluded by reiterating the fact that access to the data through the ATPS is restricted to the following situations:

- An indication (suspect, presumptive positive, etc.) or confirmed positive test of a foreign animal disease;
- An animal disease emergency as determined by the Secretary of Agriculture and/or State Departments of Agriculture; or
- A need to conduct a traceback/traceforward to determine the origin of infection for a program disease (brucellosis, tuberculosis, etc).

In the question and answer session which followed the formal presentation, Dr. Clifford once again emphasized the point that NAIS would remain voluntary on the federal level and that with the databases being in private or state hands, producers could be assured that their data would remain confidential. ●



Dr. John Clifford



Equine Health Report Summer 2007

Equine Health Report provides the latest information on issues pertinent to equine health initiatives, strategies, research and regulatory action. It is a communications initiative of the NIAA Equine Health Committee and is produced in cooperation with USDA-APHIS. Reprinting is encouraged.

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Human Bone Cement (cont'd from page 1)

tures.

While both cements were similar in handling characteristics, the researchers found that immediate adhesion was not a shared characteristic. Magnesium cement provided immediate adhesion while calcium cement did not. The calcium cement was biocompatible and provided some cementing once hardened.

"Our research showed that the magnesium bone cement was effective in supporting internal fixation, bonding loose bone fragments, providing filler and acting as a

scaffold for new bone growth in horses," Dr. Bertone says. "Thus, if a horse suffers a fracture that results in numerous fragments or is not a candidate for surgery, the veterinary community and horse owners would have additional therapy options to help these fractures heal."

The OSU research team was comprised of Drs. Bertone, Martin Waselau, Valerie Samii, Steven Weisbrode and Alan Litsky. The study was published in the April 2007 edition of the *American Journal of Veterinary Research*. ●

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For more information see
www.animalagriculture.org.

First Horse Genome Sequence Available to Biomedical, Veterinary Researchers

Biomedical and veterinary researchers now have free access to the first draft of the horse genome sequence. The first draft of the horse genome sequence was deposited in public databases in early February.

"Researchers will continue to further improve the accuracy of the horse genome sequences and to deposit even higher resolution assembly in public databases," states Geoff Spencer, a spokesman for the National Human Genome Research Institute (NHGRI).

In addition to sequencing the horse genome, researchers produced a map of horse genetic variation using DNA samples from a variety of modern and ancestral breeds, including the Akel Teke, Arabian, Icelandic, Quarter Horse, Standardbred and Thoroughbred. The map is comprised of 1 million single nucleotide polymorphisms (SNPs) that will provide scientists with a genome-wide view of genetic variability in horses which will help identify the genetic contributions to physical and behavioral differences as well as to disease susceptibility.

"More than 80 known genetic conditions in horses are genetically similar to disorders seen in humans, including musculoskeletal, neuromuscular, cardiovascular and respiratory diseases," Spencer states.

Spencer explains that initial sequencing assembly is based on 6.8-fold coverage of the horse genome. This means, on average, each base pair has sequences almost seven

times over.

"Comparing the horse and human genomes will help medical researchers learn more about the human genome and will also serve as a tool for veterinary researchers to better understand the diseases that affect equines," Spencer states.

Funding

The \$15 million effort to sequence the approximately 2.7 billion DNA base pairs in the genome of the horse was funded by the NHGRI, part of the National Institutes of Health. Leading the genome map team was Dr. Kerstin Lindblad-Toh at the Eli and Edythe L. Broad Institute of the Massachusetts Institute of Technology. Harvard University, Cambridge, Mass., carried out the sequencing and assembly of the horse genome.

Sequencing of the domestic horse genome began in 2006, building upon a 10-year collaborative effort among an international group of scientists to use genomics to address important health issues for equines. Through the years, the work became known as the Horse Genome Project.

At the center of the scientists' DNA work was Twilight, a Thoroughbred mare that supplied a small sample of blood. Twilight, who is stabled at the McConville Barn, Baker Institute for Animal Health, College of Veterinary Medicine, at Cornell University, was part of a small herd of horses that had been selected and bred for more



Twilight, the Thoroughbred whose DNA was used in the sequencing effort.

than 25 years to study the mechanisms that prevent maternal immunological recognition and destruction of the developing fetus during mammalian pregnancy. The research, conducted by Cornell professor Doug Antczak, DVM, PhD. and funded by the National Institute of Child Health and Human Development, has implications in reproduction, clinical organ transplantation and immune regulation.

To learn more about the expanding field of comparative genomics, please visit www.genome.gov/11509542. A complete list of organisms and their sequencing status can be viewed at www.genome.gov/10002154. A publication analyzing the horse genome sequence and its implications for horse population genetics is planned. ●

Pergolide Removed, Then Returned to the Market

On May 11, the Food and Drug Administration (FDA) Center for Veterinary Medicine announced it would allow bulk pergolide to be used in compounding pergolide for use in horses. That's good news—and proof that the FDA listens to the animal health industry.

The equine community didn't stand still when the FDA announced that pergolide mesylate had been withdrawn for human use because of a risk of damage to the heart valves of human patients. Action was initiated because the drug is also used to treat pituitary pars intermedia dysfunction (PPID), also known as equine Cushing's disease. Because pergolide has been withdrawn for its approved use in humans—and compounding of animal drugs from bulk drug is considered illegal, wholesalers would have had no legal way to bring the drug into the country for compounding use.

After the FDA's withdrawal announcement, the American Association of Equine Practitioners (AAEP) worked to encourage the FDA to provide an exemption for importing bulk pergolide. The AAEP's effort consisted for sharing information and emphasizing the importance of the drug to equine practitioners and their clientele.

Horse owners, veterinarians, pharmacists and farriers mounted an online campaign with the petition sent to the FDA and the manufacturers of pergolide mesylate asking for continued production and availability of the drug.

"The FDA's action has averted a crisis in equine health care," states Dr. Eleanor Kellon, VMD and co-owner of the Yahoo Equine Cushing's and Insulin Resistance Group, states. Dr. Kellon estimates the number of horses on pergolide at 60,000 to 70,000.

In its May 11 statement, the FDA Center for Veterinary Medicine stated: "FDA is working with the sponsors of the approved products and all other interested parties to ensure that pergolide remains available to treat Cushing's Syndrome in horses until a new animal drug application is approved for that use. This includes trying to make the approved product available through veterinary distribution channels and exercising enforcement discretion as appropriate over the pharmacy compounding of pergolide."

The FDA's statement underpinned the importance that bulk substance for pharmacy compounding should be labeled for "animal use only" and all pharmacy compounding must be performed under a valid veterinary prescription to treat an affected horse. ●

Shortage of Food Animal Veterinarians: A Call to Action

A year ago the Spring/Summer 2006 Equine Health Report featured the article "Projected Serious Food Supply Veterinarian Shortage Poses Threat to Industry, Society," that provided an overview of the Food Supply Veterinary Medicine Coalition Report conducted by Kansas State University's College of Business Administration on behalf of various veterinarian organizations. The article noted that, while America's livestock and meat industries have one of the world's best health and safety records, this status "may be threatened in the years ahead because of a projected severe shortage of food animal veterinarians."

Research findings were also published in three articles in the June 1, June 15 and July 1, 2006 issues of the Journal of American Veterinary Medical Association (JAVMA).

Mainstream media, including the Associated Press Wire, New York Times and the Brownfield Network, picked up the information and relayed it to the American public at the time. This spring, the story of the shortage of food animal veterinarians came alive again with a second round of mainstream media in the United States and outside the country.

A headline in the International Herald Tribune read, "Health experts in U.S. say shortage of farm animal veterinarians could lead to disease outbreaks." The first two sentences of the article expanded on the headline: "Public health experts are concerned that a shortage of farm animal veterinarians in the U.S. could lead to disease outbreaks, potentially endangering human health and threatening the nation's food supply. The American Veterinary Medical Association estimates the shortage at a relatively small 4 percent. But health officials say even the small gap increases the potential for diseases to go undetected."

In the same article, Dr. Lyle Vogel, director of the animal welfare division at the AVMA, was quoted, "It's not like the other 96 percent can pick up the slack. Because of the distances and workload of the remaining veterinarians, they just can't fill in that shortage."

Likewise, Robin Schoen, director of the Board on Agriculture and Natural Resources at the National Academy of Sciences, noted that, "We're kind of weakening the whole system. The veterinarian is the front line."

More to Tell

Why is the U.S. media returning to

the food animal veterinarian shortage?

"The reason for the second round of media attention is that the problem has not been solved," Dr. Vogel states. "The shortage still exists, and we believe state and federal legislatures should take action to help solve this shortage."

Dr. Vogel says one desired action is for Congress to appropriate money for debt forgiveness or loan repayment for new veterinarians who set up practices or work in the under-served rural areas. He points out that the National Veterinary Medical Service Act was passed in January 2004 but the dollar amount available is extremely low: \$500,000 in 2006 and 2007.

"This is simply not adequate assistance to make that program meaningful," Dr. Vogel elaborates.

According to a 2006 survey, the mean starting salary for veterinary graduates was \$45,546. The mean loan debt for the same graduates was \$105,805. Loan payments on that amount of debt is more than \$1,000/month, requiring average veterinary graduates to spend up to one-third of their monthly salaries on educational debt. The National Veterinary Medical Service Act authorizes the Secretary of Agriculture to establish a loan repayment program for veterinarians who agree to serve in areas of need, including government service. Yes, agencies such as the Animal and Plant Health Inspection Service and Food Safety and Inspection Service in the USDA also have experienced difficulty recruiting veterinarians to satisfy staffing needs.

In exchange for additional debt repayment, eligible students could enter into additional agreements with the Secretary to assist the USDA in addressing disease outbreaks, bioterrorist threats or similar emergency situations.

Another reason cited by Dr. Vogel for keeping the shortage of food animal veterinarians "alive" in the mainstream media is to get the public support of federal legislation regarding The Veterinary Public Health Workforce Expansion Act (VPHWEA).

The Association of American Veterinary Medical Colleges has been working very closely with the staffs of Senator Wayne Allard (R-CO) and Congresswoman Tammy Baldwin (D-WI) concerning the introduction of a veterinary workforce expansion. Their bill is similar to the Veterinary Workforce Expansion Act of the last Congress, with a few improved changes that the AAVMC

Equine Veterinarians

While Veterinarians with equine practices are not considered "Food Veterinarians" they do, of course, fit into the category of "Large Animal Veterinarians." Thus the shortage discussed in this article impacts the equine community as well.

has requested.

This legislation establishes a competitive grant program through the United States Department of Health and Human Services to build capacity in veterinary medical education and expand the workforce of veterinarians.

"We urge people to get involved and call their Congressmen and state legislators," Dr. Vogel states. "Your calls can have an impact and help spur the government into action."

Smith-Kilborne Program

In response to the food animal veterinarian shortage, USDA APHIS reestablished the Smith-Kilborne Program. The program acquaints chosen veterinary students with various foreign animal diseases which potentially threaten our domestic animal population. Upon completion of the course, participating students are asked to share their new knowledge with others at their respective veterinary schools.

The week-long program admits one student from each of the nation's 28 veterinary schools, with the USDA paying for each student's program-related expenses.

Smith-Kilborne Program classroom sessions were conducted at Cornell University in Ithaca, N.Y., with presentations and laboratory sessions conducted at the Plum Island Animal Disease Center, Plum Island, N.Y.

"This program is one-of-a-kind and covers topics in greater detail and scope than the students would get in their university programs," states Jason Baldwin, DVM, staff veterinarian, Professional Development Staff of USDA APHIS VS.

"The Plum Island sessions are invaluable, as Plum Island is the only place in the country where these students will see diseases such as foot-and-mouth disease and Newcastle disease. Acquainting the students with the symptoms of diseases such as this is important because, once the students enter practice, they will be our first line of defense." ●

Webinar Shares Info About Laminitis

"Any adult horse is potentially susceptible to laminitis," stated Dr. Rustin Moore, professor and chairperson of the Department of Veterinary Clinical Sciences at The Ohio State University (OSU) College of Veterinary Medicine, during a one-hour "Understanding Laminitis" webinar on May 23. Dr. Moore further noted that surveys show at least 15 percent of adult horses are afflicted with laminitis during their lifetime, and 75 percent of those will often develop chronic challenges.

At-risk horses, Dr. Moore stated, include systemically ill horses, heavy or obese horses, those that experience systemic inflammation involving the chest cavity, those that have a sudden change in diet, mares with retained placenta and horses with colic, diarrhea or colitis.

Using a series of illustrations, Dr. James Belknap, an associate professor of equine surgery at OSU who consults on laminitis cases and runs a research laboratory focusing on laminitis, verbally and graphically explained the digital anatomy of a horse's hoof. Dr. Belknap showed the structure of the equine foot, concentrating on how the attachment of two different types of laminae, the epidermal laminae (attached to the hoof wall) and the dermal laminae (attached to the distal phalanx/coffin bone), through a critical layer of connective tissue called the basement membrane, is critical for the support of the distal phalanx within the foot. He described and graphically explained how a breakdown in the relationship of the dermal and epidermal laminae leads to the crippling displacement of the distal phalanx in the foot in the laminitis case.

Posing the question "Why do diseases affecting the other parts of a horse's body lead to laminitis?", Dr. Belknap referred to information gleaned from the study of human diseases. He discussed how certain diseases involve, among other things, the absorption of bacterial toxins, activation of white blood cells and inflammation of the entire vascular system (blood vessels) throughout the body, leading to "MODS" (Multiple Organ Dysfunction Syndrome).

Ongoing work in Dr. Belknap's laboratory and other laboratories, Dr. Belknap stated, have demonstrated several similarities with human MODS but with "single organ dysfunction syndrome" of the laminae rather than MODS in the human.

To further help solve the "why" behind diseases which ultimately lead to laminitis, Dr. Belknap pointed to research studies by numerous individuals that support three different theories for the cause of laminar

failure in laminitis: 1) blood flow and derangements of blood flow; 2) matrix degradation (of the connective tissue binding the epidermal laminae to the dermal laminae) caused by MMPs (matrix metalloproteases) induced by bacterial toxins; and 3) inflammation. Step-by-step graphic illustrations enabled webinar participants to follow and understand his presentation that also explained cytokines and superoxide radicals.

"Most likely a combination of all three theories—inflammatory, blood flow restrictions and matrix degradation—play a role in answering this question," Dr. Belknap stated.

Dr. Moore discussed the biomechanical forces that cause laminar failure in the diseased or compromised foot. He explained the difference between breakdown of only the dorsal (front) laminae or total laminar breakdown, adding that resulting rotation or sinkage depends on whether the laminar damage involves disruption of the dorsal laminae or all of the laminae around the entire circumference of the hoof. Again, graphic illustrations enhanced the oral explanation.

"Diagnosing laminitis is not difficult once we know what we're looking for," Dr. Moore noted. He added, however, that seeing signs of laminitis means events have been occurring in the horse for hours or even days before, and this is often too late to effectively interrupt the pathologic processes.

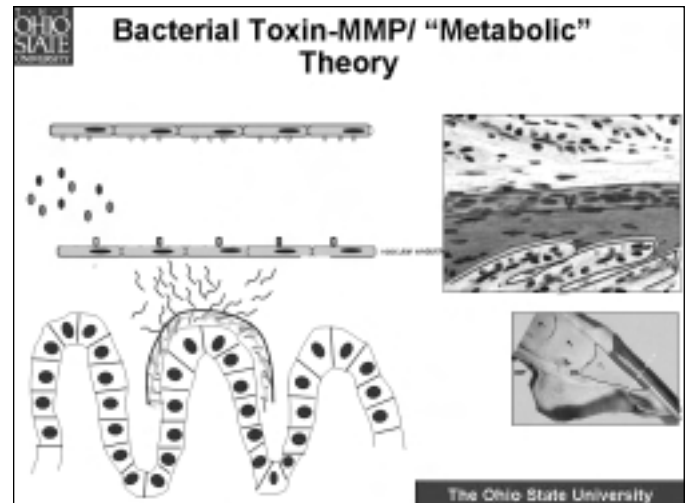
Among clinical signs for laminitis are a horse's stance, gait, digital pulse and hoof heat. Chronic signs include hoof conformation including rings and/or elongated, malformed hooves.

Dr. Moore shared that imaging modalities such as routine radiography, digital radiography, venography and MRI can help diagnose and determine the severity of laminitis.

"Imaging is getting better and better," he added.

Horses with laminitis can be treated, but not all respond to treatment. High-profile cases include Secretariat and more recently Barbaro.

Therapeutic principles brought forth by Dr. Belknap included non-steroidal anti-



inflammatory drugs (NSAIDs), DMSO, IV drugs and analgesic drugs. He emphasized that, although NSAIDs are a vital component to the treatment of these cases, individuals should be aware of potential toxic side effects of anti-inflammatory drugs and that NSAID drugs alone usually do not relieve the pain.

"Each horse will respond differently to treatment," Dr. Belknap stated. "You have to see what works with each horse."

Dr. Moore addressed the importance of reducing mechanical forces when a horse has laminitis. His list included steps such as minimizing movement and trying to get the horse to lie down or using a sling for severe cases. He noted that, while slings have improved through the years, they can still cause injury to animal and man if used improperly or if the animal does not adapt to it.

Additional topics discussed during the webinar included but were not limited to complications of laminitis and treatment of chronic laminitis.

In summary, Dr. Moore urged clinicians, farriers and scientists to "work together as a team and share knowledge, ideas and experience." He acknowledged that more research is needed in this area. To date, a significant amount of funding for laminitis research at The Ohio State has come from the USDA.

The webinar was sponsored by four commercial companies—Vettec, AIRshod, Delta Hoof Care and EquiLife—and was viewed by individuals from the United States, Canada, South America and 22 other countries. Individuals could post questions for Drs. Moore and Belknap to answer during and after the webinar.

The "Understanding Laminitis" webinar will be available for viewing at www.the-horse.com in July. ●

Livestock Premises Registration: It Works!

Within a 12-month time period, three situations have demonstrated in real life how premises registration can protect livestock producers, their animals and the livestock industry. Last year, premises information was used by the Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) to inform horse owners of a potential West Nile virus threat. In December 2006 Colorado officials used premises data to locate and contact livestock owners in areas affected by devastating blizzards. Emergency responders were able to quickly find out who needed help and what help was needed. Premise registration was also heavily relied on this spring when pseudorabies struck a Wisconsin swine herd.

"We appreciated the notification (about the potential West Nile virus threat), and it was well-received because it provided accurate information about the disease and also suggested precautions horse owners could take to limit exposure," states Calvin Larson of the Wisconsin Horse Council.

More than 56,000 premises have been registered by livestock owners in Wisconsin since the Wisconsin Premises Registration Act went into effect November 2005.

DATCP's agent for premises registra-

tion is WLIC. In this capacity, WLIC collects the premises address, the species of livestock housed at that address and contact information for the livestock caretakers. Anyone who keeps, houses or commingles livestock must register with the DATCP, and this includes large farms plus any rural or city residence housing any type of livestock species regardless of number. This includes farms and hobby farms, veterinary clinics, stables, livestock markets, livestock truckers, dealer premises where animals are kept, slaughter and rendering facilities, livestock exhibitions and any other location where livestock are kept.

Dr. Fourdraine notes that premises registration does not include the number of animals, individual animal identification or ownership information.

Pork producer Mike Salter of Black Creek, Wis., is among those who had taken the initiative to register his premises. And he's glad that he did.

"Pork producers appreciated the direct notification about pseudorabies," Salter explains. "It shows us that the premises registration program is doing what it was intended to do—protect our \$120 million pork industry here in Wisconsin."

Dr. Paul McGraw, DATCP's assistant state veterinarian adds that Wisconsin's

livestock industry and producer organizations realize that, in order to protect their livelihood and the economic viability of the state's livestock sector, it is important to implement safeguards to protect from the accidental or deliberate introduction of a foreign animal disease.

"For dairy producers in particular, a highly contagious disease such as foot-and-mouth disease could mean immediate shut-down of their daily milk shipments and threaten their ability to stay in business," Dr. McGraw says. "The faster a disease can be identified and contained, the faster normal business can commence."

Beef producer Terry Quam of Lodi, Wis., agrees.

"Premises information helps to both protect animal health and allow producers to get back to doing normal business faster should an emergency arise," Quam relates.

Animal owners and those associated with any residence that houses livestock are encouraged to voluntarily register their premises with their state or tribal animal health authority online, by fax or by mail. To register your premises, please visit http://animalid.aphis.usda.gov/nais/premises_id/register.shtml or contact your state board of health. ●

Search for National Bio-Defense, Agro-Defense Facility Down to Five Locations

A dozen states submitted bids for a proposed 520,000-square-foot National Bio- and Agro-Defense Facility (NBAF) that would replace an aging, smaller lab at Plum Island, N.Y. Although the winning state will not be announced until October, 2008, Department of Homeland Security officials narrowed down their options in July to five sites: Flora Industrial Park, Madison County, Mass.; Kansas State University, Manhattan, Kan.; Texas Research Farm, San Antonio, Texas; Umstead Research Farm, Granville County, N.C.; and University of Georgia/South Milledge Ave., Athens, Ga.

States submitting bids included Texas, with four sites; Georgia, Kansas and Mississippi, each offering two sites; and California, Oklahoma, Maryland, Missouri, North Carolina and Wisconsin with one site each. Kentucky and Tennessee worked together for one site in Kentucky.

Although states' written bids were not

made public, states were required to make available at least 30 acres of land.

The narrowing process included visits by federal officials to the 17 potential sites. The government reports that it considered several factors before making its decisions.

The main factors are site proximity to research and research capabilities, acquisition/construction/operations, and community acceptance. The DHS preferences include in-kind contributions such as offers of roads, cheap water supplies and discounted utilities.

The goal is to have the facility built and the lab operational by 2014.

Disease Priorities

Dr. John Vitko, Director of the Homeland Security Department's Chemical and Biological Division in its Science and Technology directorate, said the NBAF will provide modern, safe, secure,

state-of-the-art biocontaminant facilities to study and develop countermeasures for foreign animal and zoonotic disease. Zoonotic diseases of interest include foot-and-mouth disease, classical swine fever, African swine fever, Rift Valley Fever and Nipah and Hendra Viruses.

The new laboratory will also have BSL-3 space which will contain the organisms in the facility and BSL-4 space which will provide additional protection for the researcher against agents which can infect humans. It will be the only laboratory in the country that will have BSL-4 space designed to accommodate large animals so high consequence zoonotic agents that infect both large animals and humans can be studied.

The Homeland Security Department facility is estimated to cost at least \$450 million to build and promises at least 300 lab-related jobs. ●

News Briefs News Briefs News Briefs News Briefs News Briefs

Dr. Beeman Wins NIAA Award

Dr. G. Marvin Beeman was awarded the 2007 Meritorious Service Award of the National Institute for Animal Agriculture (NIAA) at the association's annual meeting. Dr. Beeman, who operates the Littleton Large Animal Clinic in Colorado, was recognized for his years of participation in NIAA and especially for his leadership role in creating and establishing NIAA's Equine Committee and resulting equine programs.

"I am honored and humbled to be receiving this award. I have, for a long period of time, appreciated the work NIAA does on behalf of the equine industry and was pleased when the equine industry became part of the association," said Dr. Beeman.

In making the presentation, past Meritorious service award recipient Dr. Donald Lein said, "Dr. Beeman has been

extremely active in the horse industry all of his life. Aside from being an internationally-known expert in the equine veterinary field, he has also provided a great deal of leadership to many different organizations including past president of the American Association of Equine Practitioners; past president of the Colorado Veterinary Medical Association; and is a former trustee of the AVMA Professional Liability Insurance Trust. He currently serves as the president of the Master of Foxhounds Association of America."

In addition to helping organize the NIAA's Equine Committee and being its Chairman, Dr. Beeman has served on the NIAA Board of Directors and has been very heavily involved in the work of the Equine Identification Subcommittee.

Dr. Beeman explained, "One of the most beneficial aspects of NIAA has been its leadership in the area of planning for national animal identification. It has done

a very good job of bring together all the groups necessary to further this effort."

Dr. Ron DeHaven Named Executive Vice President of AVMA

Dr. Ron DeHaven has been named executive vice president of the American Veterinary Medical Association, succeeding Dr. Bruce Little who retired. Dr. DeHaven steps into the position after having served as the USDA's top animal health official. He began his career with APHIS in 1979, then was named to the lead APHIS in April 2004. Although Dr. DeHaven accepted the AVMA position in late March, he remained at APHIS for a few months to attend the 75th General Conference of the World Organization for Animal Health May 20-25 in his governmental role and to complete several projects. ●

FFA to Assist with NAIS Implementation

The U.S. Department of Agriculture (USDA) has entered into a cooperative agreement with the National FFA Organization to advance the implementation of the National Animal Identification System (NAIS). FFA will use the cooperative agreement funds to develop and provide NAIS education programs for their current and alumni members as well as promote premises registration across the country.

The National FFA Organization stepped up to the plate with a proposal after the

USDA announced in February that up to \$6 million was available for cooperative agreements to promote NAIS and increase participation in premises registration.

"The youth involved in the National FFA Organization are the future of agriculture in the United States," said Bruce Knight, undersecretary for USDA's marketing and regulatory programs. "By ensuring the success of NAIS, we are ensuring their future as farmers."

Dr. Larry D. Case, FFA chief executive

officer and national FFA advisor, was equally as enthusiastic about the agreement.

"Together we can combine our talents and resources to educate the agriculture industry about NAIS and to help premises registration," Dr. Case stated.

The National FFA Organization, formerly known as the Future Farmers of America, has 495,046 student members that are part of 7,242 local FFA chapters in all 50 states, Puerto Rico and the Virgin Islands. ●

Another Step Toward NAIS Success

A key ingredient in the success of the National Animal Identification System (NAIS) can be found in its partnerships. These alliances include state and federal officials working side by side with industry and producers to create an effective and efficient animal disease traceability program. USDA has recently taken steps to create new relationships that will further support the implementation of the NAIS through a series of outreach meetings with representatives from Historically Black Colleges and Universities (HBCU's), also known as 1890 Land Grant Institutions, and community-based organizations that serve minority and economically disadvantaged producers.

More than 100 representatives from the

1890 institutions, community-based organizations and state agricultural representatives met with USDA officials at a May 16-18 conference on the Virginia State University campus in Petersburg, where they learned more about NAIS and worked to develop and implement NAIS outreach strategies tailored to the needs of minority producers and communities.

"NAIS works best when it is actively shaped by those who participate in the program," stated Bruce Knight, undersecretary for USDA's marketing and regulatory programs mission area.

Dr. Alma Hobbs, Dean of the VSU School of Agriculture, agreed with Knight. "As you begin to work together and forge

partnerships, that is the real success," Dr. Hobbs stated. "We are here to support that effort."

Dr. John Clifford, deputy administrator of the USDA/APHIS, underscored the importance of NAIS reaching out to involve groups such as the HBCU's.

"We are here to protect American agriculture," Dr. Clifford stated. He said the purpose of the meeting was "building trust".

This was the first of several meetings that USDA will conduct to provide NAIS education and outreach to representatives of minority groups. Another outreach event is planned later this year to provide information to Native American groups and Hispanic Serving Institutions. ●

NEW NAIS Report Highlights Lessons Learned from 2004 Pilot Projects

"The pilot projects demonstrate that the National Animal Identification System will work well and greatly benefit America's producers. These concrete examples of the system's capabilities, tried and proven in the field, are a critical step forward in our efforts to implement this important program." That's the conclusion drawn by Bruce Knight, undersecretary of USDA's marketing and regulatory programs, regarding the variety of pilot projects conducted throughout 2004 to test technologies and procedures recommended for use with the NAIS. Summaries of each of the 16 pilot projects were published in a recently released final report.

The first 48 pages of the report, published in May, are devoted to information related to 2004 initial pilot projects, with the remaining pages highlighting 2006-2007 field trials and research projects.

The executive summary of the report states that the 2004 projects noted that "projects gave stakeholders hands-on experience using identification technologies and, as a result, delivered practical solutions for their routine use."

What Was Learned

In the end, NAIS officials point out that highly valuable lessons were learned from the 2004 projects. The following summarizes several of the key lessons learned:

The retention rate of radio frequency identification (RFID) tags is much higher than anticipated. A retention rate of nearly 100 percent was achieved with the button-like RFID eartags.

- Use of group/lot identification can significantly reduce a major barrier for producers to participate in NAIS.
- RFID is not a "plug-and-play" application and must be customized to individual locations - the needs of which vary tremendously. Overall, the majority of projects reported that the RFID/reader technology required careful setup, calibration, modification, and use.
- Proper tag application and placement has a direct and significant impact on the retention and readability of the tags.
- Existing animal health and marketing programs can be an effective, producer-friendly means of collecting data for NAIS. Specific programs such as the national Dairy Herd Improvement Program are

already in place that integrate well with NAIS. These programs allow producers to participate in NAIS with minimal time, effort or added expense on their part.

- The cost-effectiveness of low frequency RFID must be evaluated according to species.
- Workable options are available for producers who want to identify their animal electronically without investing in reader equipment. Producers were able to eliminate the need for expensive equipment by using group/lot visual tags for day-to-day management purposes and then matching the tags with individual RFID tag numbers when animals moved off the premises.
- The use of electronic identification allows for more accurate and efficient recordkeeping. Projects' participants reported that using RFID technology significantly reduced data entry errors, enhanced business practices and decreased labor costs.
- Calves can be tagged successfully with RFID devices at a very young age.

The full report is available at www.nais.gov. Once at the site, simply click on "NAIS Pilot Projects/Field Trials Summary" under the "What's New" section at the far right side. ●

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