

Equine HEALTH REPORT

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'We'll Do What It Takes...' to Keep EP from Being Endemic to U.S.

The U.S. equine industry's view on equine piroplasmiasis (EP) is summarized in the vision statement of the EP Subcommittee of the Infectious Diseases of Horse Committee (IDOHC): "To do what it takes to ensure that EP does not become endemic in the resident horse population of the United States."

In a presentation at the American Horse Council Fall Issues Forum in Lexington, Ky. in November, Dr. Kent Fowler, chief of the animal health branch of the California Department of Food and Agriculture, reiterated this vision statement and underscored numerous factors why steps must be taken to keep EP from becoming endemic in this country.

Dr. Fowler explained that EP, a blood-borne protozoal infection, can affect horses, mules, donkeys and zebras and may be fatal in up to 20 percent of previously unexposed

animals. The disease, which produces a wide range of clinical signs, traces to two organisms: *Babesia caballi* and *Babesia equi*. These two organisms are present in 90 percent of the world inhabited by horses and are transmitted by adult and nymphal ticks. Incubation times range from 10 to 30 days, with intrauterine transmission to the foal common.



Although EP is not endemic in the United States, Australia, Canada, England, Ireland and Japan at this point in time, the disease has a presence in Africa, Europe, Asia, South America and Central America.

"Epidemics in Florida occurred in the 1960s and were followed by a successful 10-year eradication campaign," Dr. Fowler interjected.

Dr. Fowler noted that the current EP status in the United States is in question.

"It is assumed that EP may exist at some unknown prevalence level in the United States," he said. "This assumption is based on the fact that prior to Feb. 1, 2004, the 'official test' for U.S. important was the CF test, and this test occasionally yielded 'false negative' results.

"Unscrupulous owners compounded the problem with immunosuppressive drug administrations to create 'false negative' results."

Although the CF test was replaced by the c-ELISA in August 2005—a test that Dr. Fowler said is highly unlikely to yield 'false negative' results on adult horses—potential tick vectors exist in the United States. These tick vectors include Dermacentor, Hyalomma and Rhipicephalus.

Complicating the situation is the fact that the dynamics for disease transmission remain unclear.

"EP horses may exist in the United

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APHIS Proposes Program Changes to Tighten CEM Control

To meet the growing concern about Contagious Equine Metritis (CEM), the U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service/Veterinary Services (APHIS/VS) is proposing a number of measures, including revising several regulations. CEM, a highly contagious equine venereal disease, was found in late 2006 in Wisconsin in two stallions that had been imported from Germany. (For basic information on the disease, see www.aphis.usda.gov/lpa/pubs/fsheet_faq_notice/lfs_ahcem.html.)

The reconvened CEM Working Group will identify areas that could require regulatory changes. Areas under scrutiny include sample collection protocols and frequencies, standards for test mares, requirements for recently castrated stallions, complement fixation tests on imported mares upon arrival at CEM facilities and the oversight roles of APHIS and the states.

Other items up for change include reviewing and updating various policy documents and memos by the end of 2007 and

revising the Station Review Guide to reflect current criteria of the CEM Program. A database will also be created for imported horses undergoing CEM quarantine and testing.

In addition, state officials will be designated to disseminate information about the CEM program in their state. CEM testing laboratories will receive a letter from APHIS asking if they want to continue testing for the disease. Personnel who perform tests will be informed of the need to receive updated training. Equine veterinarians will be offered a one-day training session as well.

Recently published research has raised concerns about adherence to standards in some categories of horses which are now exempt from CEM quarantine and testing in the U.S. The Center for Epidemiology and Animal Health (CEAH) will be asked to conduct a risk assessment of purebred horses from Spain and racing Thoroughbreds from France, Germany, Ireland and the United Kingdom. Because Portugal has asked for a similar exemption, their horses will also be risk-assessed. ●

Do What It Takes

(cont'd from page 1)

States at sufficient disease prevalence level to infect ticks," Dr. Fowler emphasized. "This could result in the establishment of the disease as endemic to the United States.

"And treatment is not a validated viable option."

Lots of Questions

Dr. Fowler shared one of many questions that baffle the EP subcommittee: "If EP is a viable risk to the U.S. equine population, then why are not more clinical cases being seen?" Possible answers to this nagging question, Dr. Fowler said, might be that cases not being reported, are going undiagnosed or are successfully treated and not reported. Other possible reasons might be that the threshold for transmitting disease has not been reached or that the vectors for transmission are not present.

Three additional questions that haunt the EP subcommittee include:

- 1) Are positive EP equids in the United States being treated on a periodic basis to remain under the threshold of infectivity?
- 2) Are some equids currently entering the United States with a negative c-ELISA test after being treated with imidocarb-steroids to alter their EP c-ELISA import entry test status?
- 3) Should an ELISA test be developed to

test for the presence of imidocarb in imported equids?

But these questions are just the start of questions surrounding EP.

"A key question is 'What is the prevalence of EP seropositive equids in the United States?'," Dr. Fowler states.

This key question brings forth another question: "What do we do with horses that have legally entered the United States and are later found to be EP seropositive?"

"Is the answer euthanasia, exportation, life-time quarantine or attempt treatment?" Dr. Fowler asked.

Needs

To estimate the number of seropositive EP equids in the United States, the EP subcommittee, Dr. Fowler reported, is requesting a survey, with criteria thresholds developed prior to conducting the survey. Results of the survey would be evaluated using CEAH's expertise and would result in determining progression of EP efforts.

Current needs, Dr. Fowler stated, center on three areas: import restrictions, USDA funding for research, and cohesive state and federal policy.

"We want stringent import restrictions maintained—restrictions sufficient to detect seropositive horses before importation into the United States," Dr. Fowler stated. "There is also a need for additional funding from USDA to research effective treatment protocols for EP and an effective vaccine development.

"A third need is that a cohesive policy be developed at both state and federal levels for identifying and dealing with seropositive resident EP horses."

The EP subcommittee has also discussed the possibility of disbanding. The subcommittee proposes that it disband until EP becomes endemic in the United States.

Resolutions

Dr. Fowler told the group about two resolutions written at the U.S. Animal Health Association meeting in Reno in October.

One resolution focuses on the IDOHC/USAHA request that regional NAHLN laboratories make available and submit residual-banked EIA serum samples or other equid serum to NVSL for testing by c-ELISA for the presence of antibodies to EP.

"The absolute requirement is that all samples submitted for evaluation carry no identification whatsoever as to animal name/numerical identification, date of collection, premises of origin or the laboratory or state from which they originated," Dr. Fowler stated.

A second resolution is that IDOHC/USAHA request the USDA determine a designated representative number of samples to evaluate from NAHLN submissions to provide meaningful estimates of the current prevalence of EP in the U.S. resident horse population or accept the previously statistically recommended 15,000 samples which were to have been obtained through the slaughter surveillance initiative. ●

Equine Umbilical Cord Stem Cells Isolated

Veterinarians may one day have a quicker and less invasive alternative to harvesting and processing equine stem cells from adult fat or bone marrow for the treatment of traumatic and degenerative diseases such as bowed tendons, ligament, osteoarthritis and osteochondral defects. The alternative: collected and preserved stem cells from the equine umbilical cord.

Researchers from the University of Kansas Department of Pharmacology and Toxicology recently successfully isolated stem cells from the equine umbilical cord. Once collected, the umbilical cord matrix cells can be preserved frozen, cultured and differentiated into a host of cell lines, including bone, cartilage, fat and those of the nervous system.

Dr. Linda Black, DVM, PhD, director of Clinical Development, Vet-Stem Inc., explains that stem cells obtained from birthing tissues, including the umbilical cord, can be obtained non-invasively and

early in the life of the horse and be banked for future use. Banking equine umbilical cord stem cells cancels the harvesting and processing time required to isolate stem cells from adult fat or bone marrow.

Dr. Black points out that equine umbilical cord-derived stem cells can help treat a number of diseases and assist with tissue engineering. Stem cells help tissues regenerate rather than repair by forming scar tissue. Research shows that stem cells assist the healing process by decreasing inflammation, providing growth support and by their ability to develop into other cell types.

Head researcher Dr. Kathy Mitchell of University of Kansas notes that additional studies are underway to fully explore the potential uses of umbilical cord matrix cells.

More about this study, "Characterization and differentiation of equine umbilical cord-derived matrix cells," appears in the October edition of *Biochemical and Biophysical Research Communications*. ●



Equine Health Report Fall/Winter 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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WANTED: National Surveillance Systems

A meeting of the joint U.S. Animal Health Association (USAHA) and American Association of Veterinary Laboratory Diagnosticians (AAVLD) Committee on Animal Health Information Systems at the associations' annual meeting, in Reno, on Oct. 23 resulted in a key action: the group wants comprehensive and integrated surveillance systems developed at the national level to progress rapidly. The committee also called for the development of a "national reportable animal disease list."

Having a comprehensive, integrated National Animal Health Surveillance System (NAHSS) would address—and ultimately answer—multiple questions. Three top-of-mind questions includes

- 1) Can the USDA rapidly find disease throughout the nation wherever it may arise?
- 2) Can the U.S. make statements about its national disease status that will convince trading partners and consumers that American agricultural products are safe and disease free?
- 3) Can national policy decisions be based on actual surveillance data so that tax dollars can be spent wisely?

The group agreed that a comprehensive national surveillance system should focus on diseases of significant economic or health impact, such as foot-and-mouth disease, and on emerging diseases and issues. Another point of agreement was that the information system infrastructure be built to support a comprehensive and integrated surveillance system where efficiencies might be gained by leveraging efforts and activities across diseases, species, field activities, laboratory specimens, database development and even standardized analytic and reporting methods.

Dr. Bruce Akey, director of the Cornell University Veterinary Diagnostic Laboratory and co-chair of the joint committee, stresses

that the "old" way of surveillance has shown great success in eradicating many diseases where a sample collector's approach to surveillance is "stove piped" to one sample, one test, one disease, one location, one of many databases and information that represents a fraction of American industry but cannot provide confidence to consumers and trading partners about the disease status for the United States as a whole. He adds that the "new way" of surveillance is more applicable in today's world of diseases that are rare but of great concern to those who buy U.S. products.



"In a new and comprehensive surveillance system, one sample could serve multiple purposes," Dr. Akey states. "It will be tested for several diseases, both species specific and cross species."

"Test results will be electronically transmitted through the National Animal Health Laboratory Network (NAHLN) backbone. This information will be fed upward to a centralized database and is to be available for use at the state and local levels."

Dr. Aaron Scott, Centers for Epidemiology and Animal Health (CEAH), National Surveillance Unit (NSU), Fort Collins, Colo., emphasizes that surveillance is not the business of collecting samples—it is the business of collecting information.

"A comprehensive and integrated national surveillance must be designed for finding samples that have the most information value. If the characteristics of the disease permit a sample from one animal or farm to provide that information for two diseases, then we have gained efficiency," Dr. Scott explains. "This kind of surveillance system, however, is far more encompassing than simply doing two tests on one sample."

Dr. Scott offered several examples of a comprehensive, integrated approach. Field operations might use common infrastructure for multiple diseases—from staff, trucks, copy machines to sample sources. In addition, with the "new way," laboratories might use standardized data systems for reporting results, and database designers might use modules that are based on a common template rather than starting fresh for each disease. Data entry systems might be integrated so that field personnel can enter multiple sets of data through a common portal at the sight of the sample collection."

"The system is comprehensive when it provides information about all of the population and multiple diseases and is representative of all the nation," he adds.

Dr. Scott points out that the 21st Century has seen increased mobility of people and movements of animals. As such, he says there will be growing need to demonstrate to American consumers and foreign trading partners that U.S. food and livestock are disease free.

"To gain and maintain this confidence, we must be able to make statements about disease status in our nation and industries as a whole, and we must leverage the limited funds in the most efficient manner possible—that is what comprehensive integrated national surveillance is all about," he summarizes. ●

NIAA Directors Headline Speaking Program

Dr. Cindy Wolf, Dr. Peter Timoney and John Adams, all three members of the National Institute for Animal Agriculture's (NIAA) Board of Directors, delivered major addresses at the only joint general session of the recent meetings of the U.S. Animal Health Association and the American Association of Veterinary Laboratory Diagnosticians in Reno in October.

The general theme of the session was the status of major diseases facing U.S. animal agriculture. Dr. Wolf, a sheep and goat specialist/producer, updated the industry

on the scrapie eradication program and urged the industry to support the final push toward eradication. John Adams, recently retired CEO of the National Milk Producers Federation and a dairy farmer, detailed the effort to control John's disease, a non-program effort, first initiated by industry and now a government-industry effort.

Speaking on behalf of Dr. Charles Issel, his colleague at the University of Kentucky, Dr. Timoney addressed the disease, equine infectious anemia (EIA.) EIA is largely under control in most areas of the

country, due to state regulations which require coggins test annually. Drs. Timoney and Issel agree the industry must decide how to go forward with EIA. For example, in most areas of the nation, the control program could work well with tests administered at the time of sale rather than annually, thus saving producers millions of dollars.

All three speakers agreed from their various perspectives that producers/industry must drive the future of these and other diseases of concern. ●

NAIS Business Plan Under Development Lists 7 Strategies

During the general session of the National Institute for Animal Agriculture's (NIAA) ID•INFO EXPO in Kansas City, Mo., in August, Dr. John Clifford, Deputy Administrator, USDA/APHIS/Veterinary Services, publicly announced a business plan for advancing animal disease traceability.

This business plan supplements the National Animal Identification System (NAIS) Draft User Guide which was issued in 2006 and is being updated and re-published in December 2007. The NAIS Business Plan was also explained at the October joint annual meetings of the U.S. Animal Health Association (USAHA) and the American Association of Veterinary Laboratory Diagnosticians (AAVLD).

"We are excited about the future of NAIS," stated Neil Hammerschmidt, one of three NAIS program coordinators. "We've come a long way. . .we are headed in the right direction."

As of Oct. 30, 2007, premises registration had totaled 422,852.

"While premises registration continues to be a priority, premises registration alone will not get the job done," Hammerschmidt emphasized. "Animal identification is progressing as well."

Hammerschmidt emphasized that the NAIS business plan is being designed to obtain the greatest return on investment while advancing traceability. The approach taken also focuses on establishing action relevant for each species.

Plan Includes 7 Strategies

The NAIS business plan to advance traceability is comprised of seven strategies:

Strategy 1: Prioritize species/sectors.

Strategy 2: Harmonize animal identification systems.

Strategy 3: Standardize data elements of disease programs to ensure compatibility.

Strategy 4: Integrate automated data capture technologies with disease programs.

Strategy 5: Partner with states.

Strategy 6: Collaborate with industry.

Strategy 7: Advance identification technologies.

Strategy 1

To maximize the effectiveness of resources, NAIS program coordinator Dr. John Wiemers explained that species have been prioritized into two tiers. Tier 1 encompasses primary food animals—cattle, swine, poultry, sheep, goats, deer and elk—and equine. Horses are listed as a priority due in part to frequent animal movement. Tier 2 covers all other livestock.

Each tier is then broken into three categories: high priority, medium priority and low priority.

Within Tier 1, bovine is a high priority, ovine is a low priority and all other livestock are a medium priority. Dr. Wiemers noted that sheep are ranked as a low priority "not because they aren't important."

"It just means that that ship is sailing straight with a full sail. They have a good hand on the rudder. The resources are there to make that sector very capable of traceability," Dr. Wiemers told those attending ID•INFO EXPO. In the end, the sheep industry will require less resources and is therefore ranked as a lower priority.

Strategy 2

"The harmonization of animal identification systems will result in more cost-effective options benefiting producers while achieving increased animal disease traceability for the entire industry," Dr. Wiemers stated.



Neil Hammerschmidt gives an overview of the NAIS business plan.

Domestic programs that fall under the "harmonization" strategy include breed association and performance recording, Agricultural Marketing Services (AMS), Quality Systems Assessments and industry alliances.

Strategy 3

"Standardization of animal identification within our trade partners is imperative," Dr. Wiemers said.

Dr. Wiemers specified the integration of NAIS with disease programs as "one of our immediate priorities." National standards will be set, and definitions will be given in regulatory form.

The sole version of animal identifica-

tion number recognized will be 840. A transition or sunset date will aid moving to this Animal Identification Number (AIN).

"Additionally, the seven character Premises Identification Number (PIN) will be recognized as the sole official format for the premises identification number," Dr. Wiemers shared. "Other formats can be used for other purposes, but, for official disease control programs for state movement of livestock, the seven-character PIN will be the official format."

Strategy 4

"Several of the existing disease control programs have begun to incorporate various data capture technologies. Further integration of these technologies will provide great benefit to our traceability," Dr. Wiemers stated.

Strategy 5

During ID•INFO EXPO, National Animal Identification System (NAIS) program coordinator Dr. Dave Morris said that the NAIS business plan recognizes the need for states to address local disease priorities as well as the need to focus on species industries in their most prominent areas of needs.

"USDA will continue to support state, tribe and territory cooperative agreements," Dr. Morris elaborated. States will be responsible for identifying traceability risks and identify how such risks will be addressed.

Strategy 6

Dr. Morris listed several collaborative efforts in place with industry partners. Groups cited by Dr. Morris included but were not limited to National Pork Board, American Angus Association, National Milk Producers Federation, and National Future Farmers. USDA is also planning to work cooperatively with accredited veterinarians, Brand State Working Group, packers and renderers. Veterinarians were acknowledged as being first responders to outbreaks.

"These are important to us because these producers receive information directly from these organizations and can assist our



USDA/APHIS' Dr. John Clifford announces NAIS business plan.



Dr. John Wiemers discusses Strategies 1-4.

efforts greatly," Dr. Morris stated. Work includes outreach efforts and identification of premises.

Additional partnerships efforts that are a USDA priority include those with feedlots, livestock markets, industry alliances and harvesting facilities.

Strategy 7

The advancement of identification technologies strategy addresses both today's technologies and emerging technologies. Performance standards will be pinpointed, with advancing technologies evaluated. The goal is to have accurate, timely information.

Summary

In closing remarks to ID•INFO EXPO participants in Kansas City, Dr. Morris stated, "We will continue to advance traceability through industry-state-federal partnerships."

The NAIS business plan for advancing animal disease traceability is in draft stage, with the USDA seeking input from targeted groups. NAIS staff liaisons conducted con-

ference call discussions with the species working groups and the subcommittee in early November. Similar teleconferences were hosted by USDA with industry organizations, state animal health officials, areas veterinarians in charge and staff members working on animal ID issues.

"While not all comments may be addressed in the published draft, we intend to read and review each of them before publication," Dr. Clifford stated. "The USDA appreciates past contributions to the development and implementation of NAIS and will continue to work with industry to make the program a success." ●



Dr. David Morris share information regarding Strategies 5-7 and provides the summary.

The NAIS coordinators stressed that the business plan and concepts and strategies focus on the areas with the greatest returns on investment, and will utilize a critical mass approach.

"We look at critical mass as best estimate of participation level needed to advance and achieve a more functional traceability system," Dr. Morris stated.

"We anticipate that critical mass will predictably vary by species."

Until more information is available, 70 percent level of participation is the level set. That level will be exceeded by some species. Dr. Morris noted that commercial poultry has about 95 percent participation while swine is close to being 100 percent. Sheep and goats are at 75 percent traceability and should advance to 90 percent.

Dr. Morris cited the cattle industry as having "the longest journey" among the species. A bookend approach will be taken, with the goal of reaching the 70 percent level, focusing on termination records reported at harvest.

Two New HERDA Tests

Two DNA tests for the autosomal recessive connective tissue disorder hereditary equine regional dermal asthenia (HERDA) have been developed by two different teams of researchers and are available to the public. One test for the hereditary disease was developed by genetics researchers at Cornell University with the other test developed by researchers at the University of California-Davis.

Both tests can be used with hair or blood samples.

HERDA is a disease caused by a homozygous recessive gene that, when expressed, causes a collagen defect in the skin resulting in a lack of adhesion in the

deep layers of skin. Trauma to the skin results in skin wounds that don't heal. Most affected horses have a poor quality of life and are typically euthanized.

HERDA is predominantly in American Quarter Horses and is associated with certain cutting bloodlines. Horses typically don't show symptoms until they are two years of age and start to be worked under saddle.

UC-Davis' study of a control group suggested that 3.5 percent of Quarter Horses are carriers of the disease. Because carriers do not show symptoms of the disease, owners and breeders rarely know they have a carrier.

Cornell University geneticist Nena

Winand, DVM, PhD, said the test identifies normal, carrier and affected horses, with affected foals definitively identified at birth.

"Identification of animals that carry this gene prior to breeding will enable responsible breeders to either eliminate carrier stock from their herds or make educated breeding decisions with a view to achieving the prevention of an increase of the presence of this disorder and, hopefully, preventing it becoming as prevalent as HYPP (hyperkalemic periodic paralysis) did in the same breed," stated Dr. Stephen White, Department of Medicine and Epidemiology, School of Veterinary Medicine, UC-Davis. ●

EMPF Linked to EHV-5

Equine multinodular pulmonary fibrosis (EMPF), a progressive new equine respiratory disease, has been linked with EHV-5. Dr Kurt Williams, DVM Dipl ACVP at Michigan State University connected the disease with EHV-5 when he found viral inclusion bodies in cells obtained from the affected tissue. The unsolved mystery is whether this is a new variant of EHV-5 or the common strain.

Disease symptoms include a low-grade

fever, weight loss and progressive respiratory disease often thought to be heaves or bacterial or fungal pneumonia that does not respond to treatment.

Diagnosis can be challenging. That said, accurate diagnosis is a must as corticosteroids are the treatment of choice for EMPF but could make bacterial or fungal pneumonia worse. To rule out bacterial or fungal pneumonia and neoplasia, researchers recommend performing a bronchial alveolar

lavage (BAL) and an ultrasound-guided biopsy of the lung masses to support X-ray findings and looking for fungal organisms before proceeding with treatment.

EMPF is characterized by coalescing nodules of fibrosis in the alveoli of the lungs. Chest X-rays will show short of diffuse bronchial interstitial pattern overlaid with visible nodules.

A paper on 24 cases will be published this year in Veterinary Pathology. ●

NAHMS Reports Have Practical Applications

National Animal Health Monitoring Systems (NAHMS) has conducted specific studies of equine health and management during 1998 and again in 2005, and both studies contain a wealth of information. But rather than just read the information and have it set on a shelf, Dr. Josie Traub-Dargatz of Colorado State University suggests that individual equine owners and managers use the information from the studies to compare the occurrence of selected disease in horses or health management practices employed on their operation to the national estimates reported by NAHMS.

"Individual owners and their veterinarians know how they manage the horses in their care and region, and often assume that others with horses do the same thing, but this may not be the case," Dr. Traub-Dargatz states.

To make her point, the equine veterinarian points to NAHMS information that fewer operations in the Western region

(18.4 percent) vaccinated some or all of their equids against rabies while a larger percent of operations in other regions reported vaccinations of equids against rabies (48.6 percent, Northeast region; 38 percent, South region; and 28.8 percent, Central region).

"This information can provide owners with an awareness when horses are being moved between regions or between sectors of the equine industry," Dr. Traub-Dargatz explains. "It is important for owners and their veterinarians to ask about vaccination history and not assume that the management practices used in what other owners practice in different regions."

Dr. Traub-Dargatz also advises using the studies to identify strengths and opportunities for improvement in equine health management practices.

"While a Coggins test or other test for EIA (equine infectious anemia) was required by more than 60 percent of oper-

ations that introduced new animals to the herd, the requirement of a health certificate and past medical history

were less common," she states. "Knowing the past and current health status of newly introduced horses would allow for specific measures to be implemented and manage the risk these new arrivals might pose."

Dr. Traub-Dargatz says the studies also allow the industry and scientific community to determine priorities for future equine research initiatives.

Hard copies of the reports, information sheets and CDs with electronic version of all the Equine 2005 results are available upon request from USDA/APHIS/Vs/CEAH/NAHMS/NRRC Building B, 2E7, 2150 Centre Ave., Fort Collins, CO 80526-8117 or by calling 970/494-7000. The reports and information sheets are also accessible at www.aphis.usda.gov/vs/ceah/ncahs/nahms/equine/index.htm.



NAHMS Study Looks at Equine Events

Health-management factors at equine events that could impact the occurrence and potential spread of equine infectious diseases is the focus of the U.S.

Department of Agriculture's (USDA) National Animal Health Monitoring System (NAHMS) report titled "Equine 2005 Baseline Reference of Equine Health Management Strategies at Equine Events in Six States."

The six states included in the study were California, Colorado, Florida, Kentucky, New York and Texas.

Examples of events include sales or auctions, shows, horse trials, Western events, fairs, rodeos, race meets, polo matches, organized trail rides and training clinics.

The NAHMS Equine 2005 Events Study found that show/trial was the most common event type (57.7 percent of events), followed by Western event/fair/rodeo at 21.9 percent. Race/polo events accounted for 6.1 percent of all events.

As might be expected, events in Colorado and Texas had a higher percentage of Western event/rodeo/fair events com-

pared to events in most of the other states.

The study also revealed that 57.1 percent of events did not require a health certificate for equids attending the event while only 20.3 percent of events required a health certificate for all equids, and 22.4 percent required a health certificate only for equids from out of state.


A higher percentage of events in Kentucky had some type of health requirement compared to other states in the study.

The study also found that a higher percentage of race/polo events required a health certificate for all compared to show/trial events: 57.9 percent vs. 14.5 percent.

In addition, the study looks at the type of information recorded by event coordinators and organizers regarding event participants and their equids. It also explores animal health control strategies employed at the events.

The full Equine 2005 Baseline Reference of Equine Health Management Strategies at Equine Events in Six States is available at the NAHMS web site: www.aphis.usda.gov.





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MAF Funding 100-plus Animal Health Studies

The Morris Animal Foundation (MAF) will fund about 120 animal health studies in 2008. Among the animal health studies are 11 new and continuing studies for horses, with more than \$500,000 going toward equine studies in 2008.

Dr. Hillman Presented National Assembly Award

Dr. Bob Hillman, Texas State Veterinarian and Executive Director of the Texas Animal Health Commission (TAHC), was presented the 2007 National Assembly Award for his outstanding contributions to U.S. animal health in the regulatory field. The award was presented to Dr. Hillman at the joint general session of the United States Animal Health Association (USAHA) and the American Association of Veterinary Laboratory Diagnosticians (AAVLD) in Reno, Nev. Dr. Hillman was president of USAHA in 2001 and is currently on the Secretary of Agriculture's Advisory Subcommittee for the National Animal Identification System (NAIS).

APHIS Animal Health Award to Dr. Elvinger

Dr. Francois Elvinger, professor of veterinary epidemiology at the Virginia-Maryland College of Veterinary Medicine, Virginia Polytechnic Institute

and State University, has been presented the 2007 APHIS Animal Health Award, also known as the APHIS Administrator's Award. Dr. Elvinger was recognized for his contributions to animal health improvement in the areas of information management, animal disease surveillance and appropriate responses to the identification of disease. Dr. Elvinger is currently chair of the National Animal Health Surveillance Steering Committee, which is charged with guiding APHIS' National Surveillance Unit (NSU) in the design, planning and implementation of efficient and accurate surveillance for relevant animal diseases.

One Health Initiative: AVMA, AMA

When animal health challenges such as rabies, bird flu and West Nile virus show up, the potential of human outbreak is there. Well aware of this situation, the American Veterinary Medical Association (AVMA) and the American Medical Association (AMA) have adopted a collaborative effort, "One Health Initiative," whereby the two national medical organizations will work together. This collaborative effort also extends to bioterrorism risks and biomedical research.

A new AVMA One Health Initiative Task Force, comprised of 12 leaders, will develop strategies to promote collaboration among the various health science associations, colleges, government agencies and industries. A 13th member will represent the AMA. While the task force's

main charge is to chart a course for the one-health initiative, it also will identify areas where animal and human medicine are already integrated and where integration is needed, identify potential barriers or challenges to integration, identify potential solutions to overcoming barriers or meeting challenges and prepare a comprehensive written report for the AVMA Executive Board detailing its findings and recommendations.

"I consider the One Health Initiative Task Force as the first step, and most critically important, of the one-health initiative," stated AVMA President Roger Mahr, DVM. "I envision the success of this task force will lead to an integrated national strategy of one health, one medicine."

100 Years Old

Colorado State University's Department of Veterinary Services turned 100 years old in 2007. The Colorado State Board of Agriculture established the Department of Veterinary Services in 1907, and three years later, the first class—consisting of 27 students—graduated. Today, 100 years after its inception, the CSU College of Veterinary Medicine and Biomedical Sciences receives more than 1,600 applications a year to its professional veterinary program. CSU reports that its college is consistently ranked among the Top 2 colleges of its kind in the nation and receives more federal funding to support research than any other college of its kind.

Newly Released Blueprint Lists USDA Agricultural Animal Genomics Priorities

A blueprint that will guide the U.S. Department of Agriculture (USDA) efforts in agricultural animal genomics over the coming decade has been developed and released by the USDA Animal Genomic Strategic Planning Task Force. The 10-year plan addresses research, education and extension in animal genomics to improve animal production systems.

Leading the task force, established in January 2006, was USDA's Agricultural Research Service (ARS) and Cooperative Research State, Education, and Extension Service (CREES). The 13-member task force, composed of USDA employees and

university scientists and administrators, obtained significant input during their planning efforts from stakeholder conferences, symposia, workshops and working groups.

"In the past two decades, molecular biology has changed the face of agricultural animal research, primarily in the arena of genomics and several new offshoot areas including functional genomics," stated Dr. Ronnie Green, USDA/ARS, National Program Leader, Animal Production.

"We now have in place a powerful toolbox for understanding the genetic

variation underlying economically important and complex phenotypes of agricultural animals. The Blueprint will guide activities in this critical area of science over the coming decade."

The "Blueprint for USDA Efforts in Agricultural Animal Genomics" is designed as a three-tiered pyramid. At the top of the pyramid is "Science to Practice," which is supported by fundamental and mission-oriented research in "Discovery Science," and is based on a solid foundation of "Infrastructure."

Blueprint Lists USDA Agricultural Genomics Priorities

(conti'd from page 7)

Under the "Science to Practice" tier, Blueprint priorities include 1) whole genome enabled animal selection; 2) prediction of genetic merit of individual animals from genome-based data combined with phenotypes; 3) integration of genome data into large-scale genetic evaluation programs and the use of genomic information to design precision mating systems; 4) precision management systems to optimize animal production, health and well-being; and 5) genomic capabilities that enable parentage and identity verification (traceability).

"Discovery Science" priorities encompass 1) identify genes and gene products that regulate important traits in agricultural animals such as disease resistance, animal well-being, feed efficiency and product quality; 2) understand mechanisms that regulate agriculturally relevant genes in a systems biolo-

gy framework; 3) define the mechanisms through which specific genes and genetic variation influence phenotypes and phenotypic variation; and 4) understand the roles and interactions of host animal and microbial genomes and environmental influences (e.g. animal feed, vaccines) for improving animal health, well-being and production efficiency.

The four priorities of the "Infrastructure" tier are 1) *genomic tools* to connect to phenotype and elucidate pathways of complex traits for all agricultural animal species; 2) national, comprehensive *databases and the statistical and bioinformatics tools* that integrate genomic, phenotypic and experimental information for each species; 3) *genetic resources* such as centralized animal populations that are deeply phenotypes as well as repositories for cell lines, DNA and RNA collections and gene expression resources for all species plus broadening

the mission of the National Animal Germplasm Program to become a coordinated national repository for genomic DNA, appropriate DNA libraries and specialized cell lines; and 4) *education and training* of students, scientists and the public on genome-enabled animal sciences and opportunities to help prepare the next generation of scientists plus additional emphasis on extension and outreach to enable and facilitate effective translation of genomics research and resulting technologies to the agricultural animal production sector and the public.

Single copies of this newly released publication may be obtained at no cost, while supplies last, from Dr. Ronnie D. Green, USDA/ARS, National Program Leader, Animal Production, 5601 Sunnyside Ave., Room 4-2104, Beltsville, MD 20705-5148 or by e-mail at ronnie.green@ars.usda.gov.



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