

Swine HEALTH REPORT

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NIAA Conventioneers Hear Four Unique Perspectives on Biofuels and Animal Agriculture at the 'Crossroads'

Ethanol and biodiesel, hot topics in rural coffee shops across the nation, were the focus of the Opening General Session of the National Institute for Animal Agriculture's annual meeting in Sacramento, April 2-5, as four speakers presented their unique perspectives on "Biofuels Energy: Animal Agriculture at the Crossroads."

A California farmer, livestock producer, former politician and cofounder of that state's largest ethanol producing company, Bill Jones, opened the session with "Corn, Cattle and Carbon Credits—A California Perspective" with a positive assessment on the relationship between biofuels and livestock production. Jones' company is Pacific Ethanol, Inc.

Meanwhile, Midwest economist with special emphasis on the swine industry, Dr. Steve Meyer, Paragon Economics, Inc., predicted that biofuels would negatively affect livestock producers over the next few years, "especially for pork and poultry producers who are less able to use the ethanol coprod-

uct, DDGS (dried distillers grain with solubles)."

Dr. Gavin Meerdink, Professor Emeritus for the University of Illinois College of Veterinary Medicine and now a nutrition consultant, cattle feeder and grain farmer, talked about the use of ethanol and biodiesel co-products and the effect of their nutritional composition on livestock health.

Finally, David Kaluzny, II, president of the National Renderers Association and vice president of Kaluzny Brothers, talked about his industry's perspective of biofuels in general and in particular as the role of rendered animal fats and oils (glycerin) used in biodiesel.

All of the speakers agreed that demand for ethanol, whether it's created by federal and state government policies, the high cost of oil or both, would keep the price of corn at its current price or higher for at least the next two years or until production can catch up with demand. Dr. Meyer observed that the high cost of corn is politically driven by federal and state energy policies rather than market forces. "So as long as the price of oil stays high and our energy policies remain in effect, the price of corn is likely to remain high," he said.

Further, Dr. Meyer predicted that ethanol might very likely be an "event" in agriculture equal to the introduction of soybeans as a U.S. crop or even the widespread adoption of the tractor.

As with many things, California has its own unique situation that is atypical of the rest of the country when it comes to ethanol. Due to the heavy concentration of dairy cattle, the ever-present issues relating to water availability and use and state environmental air quality policies which created carbon credits, ethanol works well in all respects in California. "Yes, the cost of corn is high," concedes Jones, "but the value of wet distillers grain as dairy feed helps offset that expense. And, price signals sent to the American corn farmer will quickly encourage significant corn production."

In fact, Jones predicts that California farmers may become significant corn producers, "and not just for silage."

The use of the coproducts, distillers grains—wet and dried, was discussed by each presenter from their varying perspectives. All agree, to date, that inconsistency in the nutritional content of these products is a problem

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New NAIS Report Highlights Lessons Learned from 2004 Pilot Projects

Meat Safe, Hogs Healthy After Melamine-Contamination

Approximately 56,000 hogs were released by the Food and Drug Administration and the U.S. Department of Agriculture for processing in mid-May after extensive testing showed that meat from animals that consumed feed contaminated with melamine and melamine compounds was safe for human consumption. Testing revealed that the pigs' kidneys filter out melamine and melamine compounds to the extent that the contaminants do not accumulate in the pork.

Dr. Kenneth Petersen, an assistant administrator for field operations at the Food Safety and Inspection Service of the U.S. Department of Agriculture, assured the swine industry and U.S. consumers that

there is "a very low risk of any adverse health effects" from consumption of meat from hogs exposed to the feed in question.

Dr. David Acheson, the FDA's assistant commissioner for food protection, stressed that a 130-pound person would have to eat more than 800 pounds of melamine-contaminated product a day to reach a level of melamine found to be toxic to people. Hogs that consumed the tainted feed appeared to be healthy.

Cats, Dogs Raised Initial Concern

The media began reporting cases in March when small animals—particularly

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for livestock and poultry producers. However, with the demand for these products rising, ethanol producers will eventually find ways to make their coproducts more reliable and easier to use.

Dr. Meerdink warned that cattle producers in particular will need to be aware of health issues resulting from distillers grains. For example, they can cause calcium and phosphorus imbalance to the point where cattle develop kidney stones. High sulfur levels can cause several problems including polioencephalomalacia (which is *not* the polio virus humans can contract, but rather a condition in which the cow's brain is damaged.) Another is copper deficiencies because sulfur & copper readily combine rendering the copper unavailable to the animal.

In addition to the difference in nutrient level between whole corn and DDGS products, "what's in the grain comes with the DDGS," Dr. Meerdink explained. This includes mycotoxins such as aflatoxin, ochratoxin and fumonisins, and antimicrobial agents such as virginiamycin.

Fumonisin is particularly dangerous in the equine diet.

"One-third—or 11.5 billion pounds—of all the fats and oils produced in the U.S. come from rendered livestock products. The

other two-thirds come mainly from soybeans, but also from other grains such as corn and canola." Mr. Kaluzny pointed out. "We have a surplus of these feedstocks which are used to make biodiesel, from whichever source."

PowerPoint presentations from Drs. Meyer and Meerdink and Mr. Kaluzny are

available at NIAA website, www.animalagriculture.org, under the NIAA News tab, click on the second "ZimmComm" Release. You can view their presentations and hear recorded interviews of each of the four speakers. You can also see their presentations on the 2007 Annual Meeting proceedings tab. ●

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. ●



**NATIONAL
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FOR ANIMAL
AGRICULTURE**

**Swine
Health Report
Summer 2007**

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

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'Mystery' Swine Disease in China Identified as PRRS

Pork producers in China were ordered to mass vaccinate their animals in May after a mysterious outbreak, later identified as Porcine Reproductive and Respiratory Syndrome (PRRS), killed numerous pigs in southern China's Guangdong province. Unlike the disease that was classified a "mystery" for several weeks, the exact number of pigs that died remains a mystery, with reports varying the count from as low as 300 to as many as "thousands."

The outbreak began around early April on the farms of two Guangdong cities—Silao and Yunfu—where up to 300 pigs died and 1,300 became infected during a 10-day period from the mystery disease with symptoms such as loss of appetite, high fever and hemorrhaging under the skin. The mystery disease then spread to nearby towns.

Hong Kong television broadcasts and newspapers contained lurid accounts of pigs from Yunfu and neighboring Gaoyao staggering around with blood pouring from their bodies.

Reuters News Service reported that some carcasses were hurled into rivers and may have been responsible for the spread of the disease to surrounding areas. Estimates place total losses at more than 3,000 animals.

The epidemic largely hit pigs raised by individual farmers, with Chinese government officials laying the blame for the disease on small pig farms with lax disease prevention measures. The New Express newspaper reported that industrial pig farms in the region—where health and sanitation conditions are better—did not report any unusual outbreaks.

When the disease was still unidenti-

fied, agriculture ministry urged stepped-up vaccinations for swine fever, pig rash and swine pneumonia and asked pharmaceutical manufacturers to increase production of vaccines and antibiotics. Once the disease was identified as PRRS, the official Xinhua News Agency said that Chinese authorities would administer the vaccine to pigs in Guangdong province "soon."

Initially, in addition to mass vaccination, the government also reportedly delivered antibiotics to pig farms in the Silao town where farmers were required to deep bury dead pigs in areas far away from water sources. The Yunfu Government disinfected local sites where the dead pigs were reported. Local markets and butchery areas were also disinfected.

On May 6, a newspaper in China reported that a deputy director from the GD Animal Quarantine Inspection Office excluded the possibility of a serious epidemic plague and human infection of the disease.

"According to preliminary findings from local government and provincial experts, a large-scale epidemic or an epidemic that can spread from animals to people has been ruled out," Yang Weixin, head of the township where the outbreak occurred, told a French newspaper. Weixin maintained that the disease had been controlled.

Reaction to Mystery Disease

When the Apple Daily newspaper reported that as many as 80 percent of the pigs in the Silao and Yunfu areas had died, some farmers panicked and quickly sold sick pigs at deep discounts.

The disease also caused a panic in local areas where residents refused to pur-

chase pork for fear of eating tainted meat.

Chinese officials banned the transport of live pigs from the affected area. Officials attempted to reassure Hong Kong about pork safety stating that there was no chance that tainted meat or sick pigs could find their way to markets in Hong Kong. Despite this reassurance, pork traders in Hong Kong stopped importing pigs from Yunfu city in Guangdong province.

"Pigs to be exported are branded to show where they come from," stated Hui Wai-kin, deputy chairman of the Pork Traders' General Association of Hong Kong. "This will allow the Administration of Quality Supervision, Inspection and Quarantine of China to track down the source of infected pigs easily and ban them from being exported."

Mixed Messages

When the mystery disease first struck remains unclear.

The Chinese public first became aware of the mystery disease affecting swine in mid-April. A pig farmer near Yunfu city said, however, that her pigs had shown fever symptoms since March and that her herd had been reduced from more than 100 in March to only four. Reports in Hong Kong said the disease began killing pigs after the Chinese New Year celebrations in February.

Complicating the situation is what appears to be a partial domestic blackout or downplaying of the story within China—at least until the first week of May.

By May 9, the disease had been identified as a strain of blue ear disease, also known as PRRS, with the recent outbreak caused by a new mutation. ●

NPB Expands Premises ID Efforts

The pork industry is bound and determined to have 100 percent of producer premises registered by the end of the year. To help achieve this goal, the National Pork Board has hired three regional swine ID program coordinators. Glenn Slack will cover the eastern region, Bruce Carrothers, the central regions, and Dallas McDermott, the western region. Funds for the premises registration campaign are being provided to NPB by APHIS through a cooperative agreement.

"We need boots on the ground that provide facts, and these coordinators will provide producers who have not registered

their premises with information about the swine ID plan and dispel myths that may be stumbling blocks to premises registration," explains Dr. Patrick Webb, the National Pork Board's Director of Swine Health Programs, Science & Technology.

"In addition, the three coordinators will educate and train other trainers to carry the message, and it is imperative that the message carried to producers is fact-based and consistent. In the end, we are multiplying the number of boots on the ground that can reach out and educate producers and have them register their premises."

Webb, who leads NPB's efforts in

domestic and foreign animal disease surveillance and response, said each coordinator has been armed with an educator's tool kit that includes an outline of the swine ID plans and specifics on premises ID. Another key item in the tool kit is a CD that explains premises registration and summarizes its advantages to pork producers.

The regional coordinators officially started May 1. After training, their first assignment involved meeting with state pork association executives and state ID coordinators to develop strategies to promote premises registration. ●

Pseudorabies Strikes Wisconsin Herd - First Confirmed Case in National Herd in Four Years

Federal and state agencies took immediate action when three hogs from a Clark County, Wis., swine herd were found positive for pseudorabies during routine testing at slaughter. This was the first confirmed case of the disease in a swine herd since 2003.

Federal and state action included identifying and visiting surrounding farms that have pigs, drawing blood samples from swine within five miles of the suspect farm, drawing blood samples from swine in herds that may have been exposed through some link to the infected herd and conducting a public meeting in the county to provide information about the disease, the testing procedures and which farms

were scheduled for visits.

Clark County's emergency management director Jennifer Lord-Kouraiichi said the county quickly issued calls for information on the spotting of any wild pigs that may have been the source of the disease.

"It's odd the disease has been resurrected," she says. "It is cause for concern."

The USDA gave Wisconsin 15 days from the time the disease was confirmed to destroy the infected central Wisconsin herd and to have all testing completed.

"Subsequent checks of the other animals on the farm found six others with the disease," states State Veterinarian Dr. Robert Ehlenfeldt with the Wisconsin Department of Agriculture, Trade and

Consumer Protection. "All animals in the infected herd were destroyed."

All of the pigs with a five-mile radius of the Greenwood-area farm were blood tested by the Wisconsin Diagnostic Lab, and all were negative. Quarantines on those swine were released after the appropriate time frame.

Under federal rule, hogs within a two-mile radius of the infected farm were retested 30 to 60 days after the infected farm was depopulated, cleaned and disinfected.

Second Herd

A second infected herd with 27 animals near Loyal, Wis., was identified in

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dogs and cats—were suffering kidney failure and even dying, and the source was traced to a rice protein concentrate, an ingredient in some pet foods. The suspect shipment of rice protein concentrate was imported and offloaded by Wilbur-Ellis, an importer and distributor of agricultural products with headquarters in San Francisco, Calif. The source of the product was identified as Binzhou Futian Biological Technology of China.

But contaminated product wasn't limited to just companion animals. Tainted feed made its way into hog and poultry feed. While pork and poultry producers do not buy feed from China, some animal feed manufacturers purchase left over ingredients from pet food manufacturers, and, as such, the tainted pet food inadvertently became an ingredient in some feed.

A California hog farm that markets hogs primarily to individuals for special events such as barbecues was the first to test positive for melamine. As a result, California officials tracked individuals who had purchased nearly 100 hogs from the farm when the animals' feed was found to include tainted pet food. Another 26 hogs sold and slaughtered at an unnamed processing plant in northern California were also tracked.

Tainted hog feed was not limited just to California, however. Within weeks, more than 6,000 hogs fed the contaminated feed were under quarantine or farm hold for more than two weeks until testing revealed the animals were safe for human consumption. The hogs were located in seven states: California, Illinois, Kansas, North Carolina, New York, South Carolina and Utah.

Swine farms that received and fed contaminated feed had animals quarantined by state order or voluntarily held by the owners. The USDA offered compensation for depopulations and disposal of swine that were fed contaminated products.

Investigation Begins Within 24 Hours

FDA first learned of a problem in mid-March with pet food manufactured by Menu Foods Inc. after the company reported illnesses and deaths in cats and dogs that had eaten some of its "cuts and gravy" style products. The Canada-based manufacturer supplies cat and dog food to numerous pet food companies that sell it under various brand names. Menu Foods voluntarily recalled about 100 different brand name products made at its U.S. plants in Emporia, Kan., and Pennsauken, N.J., and its Canadian plant in Streetsville, Ontario.

Within 24 hours of learning about the pet food problem, FDA investigators were on-site at the Emporia plant to search for possible sources of contamination. FDA worked with the manufacturer to ensure that the contaminated products were removed from the market and to inform consumers of the danger of feeding their animals the suspect products

At the same time, FDA consumer complaint coordinators around the country began taking calls from pet owners and veterinarians who reported illnesses that may have been associated with the contaminated pet food. FDA received more than 14,000 such reports in the first four weeks—more than twice the number of complaints typically received in a year for all of the products the agency regulates.

FDA inspectors collected samples of the recalled pet food and sent them to FDA laboratories around the country for analysis. FDA scientists looked at a broad spectrum of ingredients. A New York State laboratory reported finding aminopterin, a form of rat poison, in some pet food samples. FDA's Forensic Chemistry Center could not confirm these findings. What the center did find, though, was melamine in the pet foods and in the wheat gluten used as an ingredient. Subsequently, FDA's field laboratories found melamine in more than 130 of the 210-plus samples of pet food and wheat gluten. In addition, Cornell University scientists found melamine in the urine and kidneys of cats that were part of a taste-testing study conducted for Menu Foods.

An article in the Boston Globe reported that "federal regulators suspect that rogue suppliers in China deliberately laced a trio of protein supplements—wheat gluten, rice protein concentrate and corn gluten—with melamine to inflate the ingredients' protein levels and price tag." The article noted that "if it finds an intent, the FDA said its investigation could result in criminal charges."

It is not known why hogs that ate food tainted with melamine survive and merely excrete the chemical in their urine while cats and dogs consuming the same tainted food die from kidney failure.

Additional information is available at <http://www.fda.gov/oc/opacom/hottopics/petfood.html> USDA and FDA continue to conduct a full, comprehensive examination to protect the nation's food supply and will provide updates as new information is confirmed. ●

early May. The same steps taken in April in the Greenwood, Wis., area were repeated: identifying all farms with swine within a five-mile radius and testing of those hogs.

"There are 19 registered premises in that area but others were not, making the door-to-door survey necessary," Dr. Ehlenfeldt states. "This definitely slowed the process."

In the end, all hogs in the defined area tested negative for pseudorabies. As with the first infected herd, all animals in the second infected herd were destroyed.

With both incidences of pseudorabies,

state officials examined records and talked with producers, livestock markets and others to pinpoint the source of the disease and other potentially exposed herds.

"Wisconsin has been classified pseudorabies-free since 2000, so our producers have been able to move swine without testing them for pseudorabies," Dr. Ehlenfeldt tells. "However, we routinely inspect and test for this disease so we can move quickly to prevent its spread and to maintain our classification. The presence of a suspect herd should not affect our classification."

USDA agreed with Dr. Ehlenfeldt and has informed him that Wisconsin will retain its pseudorabies-free status despite the two infected herds. Federal officials classify the infections as "transitional," meaning they were probably infected by feral pigs. This status could change, however, if more infected herds are found.

As a result of the outbreak, the state of Michigan banned imports of swine from Wisconsin, and Kansas imposed some testing requirements for any Wisconsin swine entering the state. ●

Shortage of Food Animal Veterinarians: A Call to Action

A year ago the Spring/Summer 2006 Swine Health Report featured an 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 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 engaged in public health practice and biomedical research.

"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 positive action." ●

Study Ranks Health Challenges

A recently completed study has ranked and quantified veterinarians' perceptions of productivity and economic losses in the swine industry due to major health challenges. The most frequently ranked health challenge among breeding herds and nursery herds was Porcine Reproductive and Respiratory Syndrome Virus (PRRSV). In the swine finishing herd, producers pinpointed Swine Influenza Virus (SIV), *Mycoplasma hyopneumoniae* and PRRSV as their Top 3.

"Although recent research estimated the annual cost of PRRSV in the United States to be approximately \$56 million, more comprehensive estimates of the impact of all major health challenges have not been published," stated Derald Holtkamp, DVM who headed the study. "A comprehensive estimate of all major swine health challenges was needed to facilitate industry benchmarking and to help guide animal health-related investments in the industry."

The study, underwritten by Merial Ltd., and undertaken the fall of 2005 and spring of 2006, focused on the segment of the U.S. industry producing more than 150,000 pigs per year and represents just under half of the pigs marketed annually in the United States. Dr. Holtkamp says this population of companies was then segmented by size, vertical integration and geographic location in order to assure representation of the entire population of interest.

A single veterinarian at each company responded to the survey which involved face-to-face, personal interviews.

Breeding Herd Results

The most frequently ranked health challenge resulting in productivity losses in the breeding herd was PRRSV, with 18 of the 19 companies surveyed pinpointing it as a health challenge. And all 18 ranked PRRSV as the health challenge with the greatest productivity losses, with an average rank of 1. (Rankings were from 1 to as many health challenges ranked; the lower the rank, the greater the veterinarians' perceived productivity losses.)

Two companies also ranked PRRSV as a health challenge in combination with *Salmonella* and Type 2 Porcine Circovirus (PCV2).

Swine influenza was ranked as often as PRRSV among breeding herds surveyed, with swine influenza coming in behind PRRSV when it comes to productivity losses.

The next most significant health challenge in the breeding herd, according to

this survey, was clostridial diseases.

Clostridium perfringens type A was ranked as a health challenge in 15 of the 19 companies. Nine of the 19 companies ranked *Clostridium difficile* as a health challenge, with *Clostridium perfringens* type C ranked by four of 19 companies.

Fifteen of the 19 companies involved in the survey ranked rotavirus alone or in combination with *E. coli* as a breeding herd health challenge. As a single pathogen, rotavirus was cited by 10 companies. While only seven companies cited rotavirus coupled with *E. coli* as a herd health challenge, the average rank for the combination was higher than that of rotavirus alone.

Additional health challenges ranked by companies included *Streptococcus suis*, 14 companies; *Coccidia*, 12; ileitis, 13; and *Mycoplasma hyopneumoniae*, 12.

The last three on the list of health challenges in the breeding herd ranked by more than half of the companies were greasy pig disease, *E. coli* and *Haemophilus parasuis*.

Nursery Herd Results

PRRSV was the most frequently ranked health challenge in the nursery herd. As in the breeding herd, 18 of the 19 companies surveyed ranked PRRSV as a herd health challenge. And all but one company ranked this disease as the No. 1 health challenge of the herd.

Two companies also ranked PRRSV as a major health challenge in combination with *Salmonella* and PCV2.

Eighteen of the 19 companies surveyed ranked *Haemophilus parasuis* and swine influenza as a health challenge. One company ranked swine influenza in combination with PCV2 as a health challenge.

Streptococcus suis was cited as a health challenge for 17 of 19 companies while *E. coli* was ranked by 15 companies.

More than half of the companies included *Mycoplasma hyopneumoniae*, *Pasteurella multocida* and *Bordetella bronchiseptica* on their list of nursery herd health challenges

A small percentage of companies cited Post-weaning Multi-systemic Wasting Syndrome (PMWS), PRRSV in combination with PCV2, and SIV in combination with PCV2 as nursery problems. But the productivity losses associated with these diseases caused their individual rankings to be relatively high.

"Problems associated with PCVAD were only beginning to emerge in the United States at the time the survey was conducted," Dr. Holtkamp explains "Even the term Porcine Circovirus Associated

Disease (PCVAD) had not yet been adopted."

Finishing Herd Results

PRRSV was not the No. 1 health challenge among finishing herds. That dubious honor went to swine influenza, with 18 of 19 companies citing it as a health challenge. Only three companies cited swine influenza in combination with PCV2 as a health challenge.

Sixteen of the 19 companies ranked PRRSV as a health challenge. PRRSV in combination with PCV2 was ranked by only five companies, but the average rank of this disease challenge was 2.4. And, although only 11 companies of the 19 ranked *Mycoplasma hyopneumoniae* as a health challenge, its productivity losses put its average rank at 4.0.

"When PRRSV in combination with PCV2 was cited as a problem—and it was a relatively infrequent health challenge in the finisher segment at the time the survey was conducted, productivity losses were ranked greater, on average, than for any other health challenge in finishing," Dr. Holtkamp elaborates.

Ten companies ranked PMWS as a health challenge, giving it an average rank of 4.0.

Six other health challenges were ranked for more than half of the companies surveyed: gastric ulcers, *Pasteurella multocida*, *Haemophilus parasuis*, *Streptococcus suis*, hemorrhagic bowel syndrome and *Actinobacillus suis*.

Using Information

Dr. Holtkamp qualifies the survey information, noting that the "results only reflect the productivity losses and health-related expenditures associated with specific health challenges." He adds that selection of surveyed companies was not random, and that participating veterinarians were guided through a series of questions starting with identification and subjective ranking of each health challenge. The survey culminated in the veterinarians' estimation of ranges of productivity losses and health-related expenditures in affected herds.

In addition, only the segment of the U.S. swine industry that produces more than 150,000 pigs per year was included in the swine population.

"Extrapolation of the results to the entire U.S. industry should be done with caution," he states.

Dr. Holtkamp adds that he hopes the survey can be repeated during the year now that PCVAD is in the disease mix. ●

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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 lead APHIS in April 2004. Although Dr. DeHaven accepted the AVMA position in late March, he



Dr. Ron DeHaven

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.

Smith Takes New Role at USDA/APHIS

Cindy Smith has been appointed the USDA's Animal and Plant Health Inspection Service's new associate administrator. In her new role, Smith will assist in managing one of USDA's most multi-faceted agencies, charged with defending America's animal and plant resources from agricultural pests and diseases. In making the announcement, Dr. Ron DeHaven, administrator for USDA/APHIS, acknowledged Smith's 28-year career at APHIS and her commitment to "public service, vast

knowledge of agency activities and dedication to protecting American agriculture." ●

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For more information see
www.animalagriculture.org.

Lessening Incidence of HBS

Hemorrhagic bowel syndrome is often called an ambiguous health challenge. After all, it's not directly associated with a pathogen, and pigs lost from hemorrhagic bowel syndrome experience little performance loss and often appear to be perfectly healthy—until they die. In addition, the pigs that succumb to this health challenge often tend to be the larger pigs in the population.

"Most of my clients see hemorrhagic bowel syndrome, but they don't consider it an economic threat to their herd," states Dr. William Hollis, DVM, Carthage Veterinary Service, Carthage, Ill. "But, if we accept that 2 percent of late finisher mortality is a result of hemorrhagic bowel syndrome and those pigs will be 200 pounds, we are then looking at a cost per 1,000 head finisher of \$1,798—or nearly \$2 per pig."

For this reason, Dr. Hollis urges swine producers to evaluate intervention strategies to lessen the incidence of this syndrome. His efforts focus on nutrition and management.

"We have found that we can reduce the incidence of hemorrhagic bowel syndrome with intervention that prohibits the generally accepted cause of the syndrome," Dr. Hollis explains. "In a general sense, the gut is either empty or transit time is accelerated, leading to volvulus and dilatation of the bowels. A similar argument could be made that overgrowth of the mycoflora

lead to destruction of the lining thinning of the bowel and erosion of the vascular integrity."

"To reduce the incidence of this syndrome, gut-fill eating behavior and reduction in mycoflora overgrowth all lead to improvement in survivability."

Management practices recommended by Dr. Hollis include practices specific for square footage, feeder space, good daily pen management, feeder management and the inclusion of pulsed therapeutics or alternative ingredients when appropriate. His recommendation regarding stock density is to follow the controlled studies of one's genetic supplier and to base judgment on market weight maximums rather than average weight.

"The performance comparisons our clients have shared show a 1 percent to 2 percent reduction in late finisher mortality by these recommendations," he states.

Out-of-Feed Events

Researchers contend that out-of-feed events that disrupt feed availability and can lead to hemorrhagic bowel syndrome may have more negative impact than originally believed.

Dr. Mike Brumm of the University of Nebraska said out-of-feed events in grower-finisher facilities usually trace to the three major causes: 1) human errors; 2) bridging of feed; and 3) equipment malfunction.

"Human errors generally occur when feed is not ordered, prepared and delivered in a timely manner," Dr. Brumm tells.

"A second cause of out-of-feed events is bridging of ground feed in bulk bins. In this case, feed is in the bin, but, because of issues associated with flow-ability, it does not flow out of the bin into the feed delivery line. The final cause of out-of-feed events is equipment malfunction, which generally increases as facilities age."

Although the consequences of out-of-feed events have not been experimentally quantified, data suggest that feed restriction leads to high levels of hunger-driven feeding motivation. In finishing pigs, this situation may manifest itself as increases in pen-mate manipulation and activity while feed is unavailable.

"Once feed is reinstated, there is anecdotal evidence that there are high levels of aggression as pigs fight for access to the feeder," Dr. Brumm relates. "This may induce physiological stress responses, particularly in those pigs low in social status."

"In addition to hemorrhagic bowel syndrome, time without feed has also been implicated in the development of gastric ulcers."

Dr. Hollis points out that the feed outage occurrences can be costly to producers. Thus, he recommends double bins and tandem. He also urges producers to know the necessary steps for ensuring feed is always available onsite. ●

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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