

# Poultry HEALTH REPORT

A National Institute for Animal Agriculture Publication

Fall/Winter 2007

*NPIP Official Answers the Question—*

## Can *Salmonella* be Eliminated from U.S. Poultry Flocks?

Dr. C. Stephen Roney, veterinary medical officer for the National Poultry Improvement Plan (NPIP) of the U.S. Department of Agriculture's Animal & Plant Health Inspection Service (USDA/APHIS) said he doesn't believe *Salmonella* can be eliminated entirely from U.S. poultry flocks.

"But it can be controlled," he told those attending the recent joint meeting of the United States Animal Health Association and American Associates of Veterinary Laboratory Diagnosticians.

Dr. Roney said controlling *Salmonella* starts with effective biosecurity measures—from backyard flocks to large production units. He defines biosecurity as farm, personnel and management factors that are used to prevent the introduction of disease organisms into a flock of birds.

Farm factors identified by Dr. Roney to aid in *Salmonella* control include:

- Location & layout of buildings
- Ease of cleaning & disinfecting

- Away from other birds
- Restriction of visitors
- Plan for litter & dead bird disposal
- Water source & quality



- Access for bird movement
- To achieve effective biosecurity, Dr. Roney advises each operation to identify "Best Management Practices." These practices include
- Purchasing replacement birds from *Salmonella*-free breeding stock
  - Using NPIP-certified *Salmonella*-clean hatcheries
  - Selecting *Salmonella*-free feedstuffs
  - An effective rodent & pest control program

- Education & training

Dr. Roney pointed out that NPIP has "Best Management Practices" programs and information for all types of poultry operations: egg- and meat-types of chickens, turkeys, waterfowl, exhibition, game and backyard flocks as well as ostriches.

"NPIP is a cooperative industry-state-federal program that focuses on new technology that can effectively applied to improve poultry and poultry products throughout the country," he explained.

In his presentation, Dr. Roney referred to four categories of *Salmonella*: those devastating to the production of poultry; those that cause disease in people but not in poultry; those that cause disease in poultry and/or people; and those that cause no disease in people or poultry.

In the "*Salmonella* affecting poultry only" category, Dr. Roney noted that *Salmonella pullorum* (pullorum disease) has a baby chick mortality rate of up to 80 percent and limited industry growth in the 1920s. In 1927 a rapid serum test antigen was discovered, followed by a stained anti-

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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 include

- 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 spec-

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# U.S. Broiler Health Shows Slight Decline

In his broiler industry update presentation at the recent meeting of the U.S. Animal Health Association (USAHA), Dr. Scott Westfall, Pilgrim's Pride, reported that U.S. broiler flock health has seen a slight decline over the past year, according to yearly Agristats data for field condemnations, seven-day mortality and total mortality.

The decline was seen across all three parameters and is most likely due to continued problems with Infectious Laryngotracheitis (ILT) and Runting Stunting Syndrome (RSS). A poll of broiler production veterinarians ranked these as the top two disease challenges facing the industry in 2007, Dr. Westfall said.

In the poll, ILT and Mycoplasmosis were the two highest-ranking respiratory diseases. New vaccines and vaccination techniques are currently being implemented to control ILT. Mycoplasma was an issue earlier in the year but recently its spread has been limited. Infectious Bronchitis (IBV) and Newcastle Disease (NDV) have been minor issues so far.

RSS, Gangrenous Dermatitis (GD) and Infectious Bursal Disease (IBD) are the three top-ranking immunosuppressive diseases.

A consensus on the causative agent or agents of RSS has not been reached.

**Vaccinal Laryngotracheitis (VLT)** is an acute viral respiratory disease primarily of chickens, which occurs in native flocks of chickens following vaccination of others with live vaccine. Economic losses attributable to VLT have been important in many poultry producing areas throughout the United States and the world. Despite efforts to control the disease through vaccination and implementation of biosecurity measures, outbreaks of VLT are still a threat to the poultry industry

Over the past year, additional field evaluations of the VLT vaccine in broilers by the in ovo route of vaccination have

been conducted. Some reported that the in ovo dose has been reduced to lessen the effect of the vaccine on hatchability and seven-day mortality. In the field, the vaccine did stop the spread of VLT between flocks in some locations. However, it has been reported that in "hot areas" in ovo vaccinated broiler flocks did break with VLT. Clinical signs and mortality was reduced but not prevented. FP-LT has also been used in ovo in combination with the CEO field boost at 2 - 2.5 weeks of age. It was noted that the in ovo vaccination FP-LT appears to "buffer" the reaction to the CEO vaccination.

However, there is no doubt that RSS-related immunosuppression has impacted flock uniformity and processability and increased the incidence of secondary infections with GD and Inclusion Body Hepatitis (IBH). IBH is also frequently implicated in these secondary infections.

Coccidiosis and Necrotic Enteritis (NE) are the top-ranking enteric diseases. These issues are probably related and may take a more prominent role as feed costs increase.

Avian influenza (AI) has not directly impacted U.S. broiler flocks although two low or mildly pathogenic avian influenza outbreaks in commercial turkey flocks led to increased surveillance for broiler flocks in close proximity to the breaks. Broiler veterinarians indicate that a lot of time is still being devoted to AI education and contingency planning.

Antibiotic usage and nutrition will play a more prominent role in broiler health in the coming year. Lack of effective antibiotics to treat diseases and increasing demand for "antibiotic free" production will increase the need for creative disease control and prevention strategies to maintain our current high level of health, welfare and productivity.

Nutritional strategies are also changing due to high input costs. Veterinarians will be challenged to make sure the nutritional

needs of the birds are met. Failure to do so could result in classical deficiency diseases and immunosuppression.

## Ranking of Disease Concerns among 17 Broiler Production Veterinarians

Roundworms	1
Inclusion Body Hepatitis	1
Cholera	1
Airsacculitis	1
Necrotic Enteritis	2
Legs- Skeletal Issues	2
Infectious Bronchitis Virus	2
Coccidiosis	2
Infectious Bursal Disease	3
Chick Quality	3
Mycoplasmosis	5
Gangrenous Dermatitis	6
Runting Stunting Syndrome	8
Infectious Laryngotracheitis	12

## Ranking of Non-Disease Concerns among 17 Broiler Production Veterinarians

Litter Supply	1
Litter Beetles	1
Dead Bird Disposal	1
Food Safety	1
Feed/Nutrition	2
Avian Influenza (education & planning)	2
Welfare	3
Management	3
Antibiotic Issues	6

## Salmonella

(cont'd from page 1)


gen in 1931. Four years later, NPIP was formed, and an effort to eradicate *Salmonella pullorum* and *Salmonella gallinarum* (fowl typhoid) was launched.

Although pullorum disease was essentially eradicated in 1965, pullorum was found again in backyard poultry flocks in 2001 and 2002. Currently 43 states are considered to be pullorum-typhoid free.

A strain of *Salmonella* that affects both poultry and humans, *Salmonella enteritidis* (SE), is a human pathogen transmitted in intact shell eggs.

An NPIP SE control program has been in effect since 1989 for egg-type breeders and for meat-type chickens since 1994.

Dr. Roney reported that SE has steadily declined in egg-type breeders since the mid-1990s, but has shown an increase this year. This recent increase appears to follow the cycle of slight rises every five to six years.



**NATIONAL INSTITUTE FOR ANIMAL AGRICULTURE**

**Poultry Health Report**

**Fall/Winter 2007**

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

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# Current Health, Industry Issues Facing the Turkey Industry

The lack of approved efficacious drugs continues to be a top challenge facing the U.S. turkey industry. That was a key point delivered by Dr. Charles Corsiglia, Foster Farms, Fresno, Calif., when he spoke at the annual meeting of the United States Animal Health Association (USAHA) in October.

Dr. Corsiglia's presentation centered on information gleaned from a poll of turkey industry veterinarians regarding the health status and issues facing the industry between August 2006 and August 2007. The poll was conducted by Dr. Steven Corsiglia, Alpharma Animal Health, West Jefferson, N.C.; Dr. Mark Blakley, Carroll's Turkeys, Warsaw, N.C.; and Dr. Dave Mills, Jennie-O Turkey Store Company, Willmar, Minn.

"The survey shows that the turkey industry supports the scientific examination of the evidence in the cases against the use of antibiotics in agriculture, and supports the continued judicious use of antibiotics in animal agriculture," Dr. Corsiglia stated.

That said, the turkey veterinarians participating in the poll listed the lack of approved, efficacious drugs as their No. 1 issue facing the industry.

"For example, the withdrawal of the new application for drug approval (NADA) for enrofloxacin use in poultry in 2005 leaves the industry with only tetracycline and penicillin as available therapeutics, and neither of these are adequate against colibacillosis or fowl cholera, the second-rated and ninth-rated disease concerns, respectively, in the poll," Dr. Corsiglia explained.

Survey participants ranked blackhead, also known as histomoniasis, No. 22. This disease, Dr. Corsiglia noted, has no efficacious drug approved for use in turkeys. A total of 68 reported cases of blackhead were reported between August 2006 and August 2007. Losses to blackhead have been severe and can be devastating in affected individual flocks. Sporadic cases are occurring in North America.

"Dimetridazole was extremely efficacious and previously approved for use in turkeys for the prevention and treatment of blackhead, but it was banned in 1987," Dr. Corsiglia told the group. "The lack of any legal treatment for histomoniasis is of concern, especially in the case of valuable turkey breeder candidate flocks. It seems unconscionable that the industry is unable to prevent the suffering and death in flocks affected by histomoniasis when effective, yet unapproved, treatments exist."

Dr. Corsiglia said the authors of the report urge the FDA consider allowing limited use of such products in valuable breeder stock.

The poll ranked late mortality as No. 3 and leg problems as No. 4 among the turkey industry's top concerns. Late mortality is defined as mortality in excess of 1.5 percent per week in toms 17 weeks and older. Mortality was not diagnosed to a specific disease or cause.

Excess cumulative mortality of 5 to 10 percent in toms prior to slaughter has been reported. Dr. Corsiglia said late mortality may be associated with physiologic or biomechanical deficiencies following early rapid growth in heavy toms achieving genetic potential, aggressive behavior noted in mature toms, cannibalism, leg problems and/or hypertension.

The survey revealed that leg problems, such as spiral fractures of the tibia or femur, are a common complaint.

Although the survey average decreased from 3.5 to 3.1 and moved from No. 3 to No. 5, survey results show that cellulitis remains a major disease issue across all geographic regions. Dr. Corsiglia shared that cellulitis is most commonly seen in, but not limited to, commercial male turkeys nearing market age, and the prevalence and severity of cellulitis continues to increase.

According to the poll, veterinarians

indicate that the occurrence of cellulitis is now confirmed at younger ages and in both toms and hens.

Individuals participating in the poll ranked heat stress at No. 6 and poultry enteritis of unknown etiologies at No. 7.

Dr. Corsiglia shared that highly pathogenic Avian Influenza (H5N1) continues to infect poultry in Southeast Asia with sporadic introductions in Europe and Africa. He said that poultry in the U.S. have continued to remain negative for H5N1. The concern does exist, however, that the virus could spread to the U.S. through the illegal transport of infected birds or migration of infected wild birds.

The National Poultry Improvement Plan (NPIP) Commercial Poultry H5/H7 LPAI surveillance program, Dr. Corsiglia noted, provides for 100 percent indemnity for commercial plan participants. In many geographic areas where flock isolation is practical, he said controlled marketing may be the preferred method of eradication since consumption of meat from LPAI flocks does not pose a risk to the public health. If flock destruction is necessary in the eradication of H5/H7 LPAI, then 100 percent indemnity is appropriate, as it is already provided for in the eradication of HPAI.

Dr. Corsiglia called federal regulations governing the use of autogenous veterinary biologicals "antiquated" and inhibitory toward effective preventive applications in the poultry industry. He said main issues include the narrow time limits on the use of a microbiological isolate and the restrictions requiring use only in the herd of origin. As such, the turkey industry urges the Veterinary Services-Center for Veterinary Biologics to revise these regulations in favor of a more effective and user-friendly approach.

The Top 10 Disease Issues in Turkey health survey (September 2007) according to U.S. veterinarians:



Issue	Score Average (1-5)
Lack of approved, efficacious drugs	4.7
Colibacillosis	3.4
Late Mortality	3.4
Leg Problems	3.3
Cellulitis	3.1
Heat stress	3.1
Poult Enteritis of unknown etiologies	3.0
Bordetella avium	2.7
Cholera	2.7
Breast Blisters and Breast Buttons	2.7

## U.S. Table Egg Layer Flock in 'Very Good' Health

"The overall health of the national table egg layer flock is very good," reported Dr. Eric Gingerich, University of Pennsylvania, who spoke at the U.S. Animal Health Association (USAHA) annual meeting in Reno in late October.

Dr. Gingerich attributed the overall health to numerous factors: the continued availability of high quality vaccines; flock supervision from professional, well-trained flock supervisors; readily available veterinary technical assistance from primary breeder, vaccine company, diagnostic laboratory and consulting veterinarians; high-quality nutrition provided by professional nutritionists; housing in environmentally controlled facilities in cages off litter; and the use of sound biosecurity practices.

The pathologist shared information regarding an Association of Veterinarians in Egg Production (AVEP) survey—of which 14 of 65 members responded—that identified diseases of concern occurring among U.S. layer flocks.

The poll showed that the No. 1 disease of concern among U.S. layer flocks is *E. coli*/peritonitis followed by coccidiosis/necrotic enteritis, *Mycoplasma gallisepticum* (MG) and calcium depletion/tetany, all tying for second highest concern. Respiratory viruses—primarily infectious bronchitis (IB)—and cannibalism were next on the disease of concern list, tying for the No. 5 position. Other diseases on the survey list that threaten the egg industry were avian influenza (AI) and *Salmonella enteritidis* (SE).

Dr. Gingerich pointed out that colibacillosis is a problem mainly of young flocks with mortality rates of 0.5 to 4 percent per week starting shortly after housing. This condition is believed to be most often secondary to upper respiratory challenges with Mg, *Mycoplasma synoviae* (MS), ammonia, IB, etc. It also may be a primary problem if water lines are contaminated with *E. coli*.

Data show that the overall incidence of early onset colibacillosis is down from recent years.

A post-molt colibacillosis syndrome is also seen in some flocks due to declining immune system function, resulting in an ascending infection of the reproductive tract, upper respiratory infections or elsewhere.

Dr. Gingerich reported that MG continues as an issue in multi-aged facilities and is successfully controlled in most cases through vaccination.

"Each complex must customize its

vaccination program to control the strain on the farm," Dr. Gingerich stated. "Ts-11 and 6/85 live vaccines are used for controlling mild strains of Mg while F-strain live vaccine is being used to control more pathogenic strains. The live pox-vectored recombinant vaccine is being used in a variety of situations and appears to be useful in low challenge situations but still continues to be evaluated in high challenge facilities.

"Vaccine failures are somewhat common, and the unit must resort to medication programs using tylosin or tetracycline antibiotics."



Dr. Gingerich noted that coccidiosis and necrotic enteritis have been increasing in incidence in caged layers especially on the East Coast and in one strain of layer. Vaccination of pullets is being used successfully as a method of control.

In his discussion regarding calcium depletion, Dr. Gingerich explained that the depletion is normally associated with low intake of calcium, phosphorus and/or vitamin D3, particularly early in production with low feed intakes. Calcium tetany is seen when young flocks that are slow to mature are placed on calcium rich feeds too early. A post-molt problem with calcium tetany is also being found due to excessive calcium intake during the molt, resulting in a shutdown on normal hormonal action to pull calcium from the medullary bone.

Cannibalism continues to be seen, especially in high light-intensity situations in both caged and cage-free systems. In these cases, the 10-day rule for beak trimming results in longer beaks than desired compared to a beak trim at 4 to 8 weeks and results in an increase in incidence and severity of cannibalism.

"Active and passive surveillance programs (for avian influenza) are increasing across the U.S. in response to the threat of

highly pathogenic AI (HPAI) H5N1 from Asia," Dr. Gingerich stated. "There is great concern in the layer industry as to the effect of the response to an AI outbreak on movement of eggs and birds from negative flocks in or near the control zones."

Dr. Gingerich stressed that discussion and research regarding bird euthanasia methods and disposal from large cage layer houses and complexes continue.

He reported that the threat of low pathogenic AI (LPAI) for layer flocks on the East Coast is much reduced due to the efforts by New York and New Jersey Departments of Agriculture and USDA to reduce the number of the live bird markets positive for AI from 60 percent in 2004 to near zero in 2007.

The University of Pennsylvania pathologist said no significant AI isolations have been made in layer flocks in the U.S. in the last year. Nevertheless, a majority of egg operations are complying with the National Poultry Improvement Plan (NPIP) low pathogenic AI (LPAI) program for commercial layers.

The discussion about *Salmonella enteritidis* focused on the shift since the FDA's September 22, 2004, announcement regarding a proposed "Prevention of SE in Shell Eggs During Production" program. Dr. Gingerich said SE was being addressed adequately by state and industry egg quality assurance programs until that announcement. Despite the fact the regulation promulgation process has continued since then, Dr. Gingerich said the FDA has not received funding to instate the plan.

Diseases under control and of low incidence, Dr. Gingerich said, include infectious laryngotracheitis (ILT), IB, fowl coryza and urolithiasis/gout. He explained that these diseases tend to be localized to a region or a farm.

Dr. Gingerich reported that, although the recombinant pox-vectored ILT vaccine has been determined not to be a suitable replacement for chick embryo origin (CEO) vaccines in high challenge areas, a good reduction of ILT losses in a region of high ILT incidence has been seen. He noted that the new HVT-vectored ILT vaccine is showing great promise and, if effective, should reduce the amount of CEO vaccine used in layer flocks that may spread to broilers.

Diseases that are very rarely a problem for table egg layers are pox, Marek's, Newcastle, infectious bursal disease, chick anemia virus and fowl cholera. ●

## 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).



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

"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.**

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

### Strategy 3

Dr. Wiemers specified the integra-

tion 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 identification 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.



**Dr. John Wiemers**  
**discusses**  
**Strategies 1-4.**

### 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

## NAIS Business Plan

(cont'd from page 5)

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 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 conference call discussions with the species working groups and the subcom-



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

mittee 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."

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.



## NIAA 2008 Annual Meeting Animal Care and Well-Being: Facts NOT Fiction

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### Opening General Session speakers:

- Dr. Wes Jamison, University of Florida, "Human-Animal Interaction: A Historical, Social and Political Perspective"
- Dr. Ray Stricklin, University of Maryland, "Animal Care: Diverging Ethical Perspectives"
- Steve Kopperud, Policy Directions Inc., "The U.S. Political Arena: On the Table and On the Horizon"
- Charlie Annot, CMA Consulting, "Animal Care: Defining the Future"

### Other annual meeting events include:

- NIAA's 12 species-based and issues-based committee meetings, Tuesday afternoon and Wednesday, with committee sessions open to all attendees.
- A one-day ID•INFO Workshop on Thursday, April 3.

## News Briefs News Briefs News Briefs News Briefs News Briefs News Briefs

### 'No' to Birds Imported from Saskatchewan

A prohibition on the importation of live birds, poultry (including eggs for hatching) and certain avian products originating from the province of Saskatchewan, Canada to the US was initiated by the USDA/APHIS/Veterinary Services National Center for Import and Export on September 27, 2007. These prohibitions continue to date. The reason: Test results from samples collected at a commercial broiler breeder farm in the Saskatchewan Province were positive for a North American strain of an H7N3 highly pathogenic avian influenza (HPAI) virus.

Dr. John Clifford, deputy administrator for USDA/APHIS/Veterinary services, stressed that the virus detected in Canada

was not the HPAI H5N1 virus that has spread through birds in Asia, Europe and Africa.

The USDA is conducting surveillance for all strains of avian influenza in cooperation with states, the Department of the Interior (DOI) and industry. Since March 2006, USDA, the DOI and their state partners have collected approximately 175,000 live bird and environmental samples, all of which tested negative for HPAI.

### FSIS Administrator Appointed

Alfred V. Almanza has been appointed administrator of the Food Safety and Inspection Service (FSIS). Almanza has worked for FSIS nearly 30 years and most recently served as the Dallas, Texas, district

manager for more than 350 federally inspected establishments.

Dr. David Goldman, who served as acting administrator since the departure of Dr. Barbara Masters, will resume his duties as head of the office of Public Health Service.

### Barnes New Deputy Administrator of AMS' Poultry Programs

Rex Barnes has been named the new Deputy Administrator of Agriculture Marketing Service's (AMS) Poultry Programs. Barnes joined the AMS Poultry Programs as Chief of the Commodity Procurement Branch in 1988 and most recently served as Associate Deputy Administrator for Poultry Programs. ●

## 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."

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 biology 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](mailto:ronnie.green@ars.usda.gov). ●

**WANTED***(cont'd from page 1)*

imens, 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 whereas 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. ●



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