

Poultry HEALTH REPORT

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New Approach to Fighting Exotic Newcastle Disease



A virosome vaccine against Newcastle disease is administered to a baby chick by Darrell Kapczynski.

A new approach to experimental vaccines that combat exotic Newcastle disease (END) in poultry flocks has been developed by U.S. Department of Agriculture scientists. END is a contagious and fatal viral disease that affects most species of birds and kills almost all unvaccinated birds within days.

Microbiologist Darrell Kapczynski and colleagues developed the experimental vaccine at the Agricultural Research Service's Southeast Poultry Research Laboratory in Athens, Ga. The vaccine will not be available in the near future, and USDA's Animal and Plant Health Inspection Service would have to approve the new technology before it could be used by poultry producers.

"Many scientists are working on diagnostic tools, as well as preventative vaccines, to prevent a devastating END outbreak in U.S. commercial poultry flocks," said Edward B. Knipling, acting ARS administrator. "These tools to protect against Newcastle disease are essential to commercial poultry producers as well as those with backyard poultry flocks."

California recently was hit hard by a severe outbreak of END. In all, some 3.5 million commercial and backyard poultry—such as geese, chickens, turkeys, pigeons and peacocks—were euthanized to stop the virus from spreading to other states. More than \$104.5 million was spent by the federal-state task force working to contain and eradicate END.

Current vaccines rely on either

attenuated (weakened) live virus or killed virus to stimulate an immune response that induces protection in the bird against subsequent exposure to the virus. While these vaccines are effective, some birds' adverse reactions to the vaccines result in production losses. To overcome this problem, Kapczynski said he essentially took the virus apart, removed its replicating genetic material and then put it back together.

"This experimental vaccine, called a virosome vaccine, induces protective immunity but doesn't allow the virus to replicate—copy itself—or pass from bird to bird," said Kapczynski. The experimental vaccine causes a protective immune response in the birds and makes it possible to differentiate between vaccinated and virus-infected birds.

In one study, day-old chicks were divided into three groups: a control group that received a saline solution, a group that received live-virus vaccine, and a group that received the virosome vaccine. After being exposed to END, all of the birds were monitored daily for clinical signs of disease and mortality. Birds in the control group did not survive, while birds that received either vaccine were 100 percent protected.

The new approach holds promise that in the future, better vaccines can be produced through biotechnology.

Sharon Durham, ARS

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Secretary Veneman Lists Protection of Food Supply, National Animal ID System as Top Priorities

Remarks Made in October 12 Video Address to USAHA/AAVLD



While saying great strides have been made in the eradication and prevention of animal diseases, U.S. Agriculture Secretary Ann M. Veneman said that

recent events suggest that "new threats continue to emerge."

In a video address delivered to animal health officials and industry leaders attending joint annual meetings of the United States Animal Health Association (USAHA) and the American Association of Veterinary Laboratory Diagnosticians (AAVLD) in San Diego, Calif., Veneman said, "The work you are doing to promote and protect animal health is vital to our livestock and poultry producers."

"All of these animal health issues point to the importance of the development of a National Animal Identification System, which is a key priority for USDA . . . Together, we must develop a system that works."

Livestock and poultry industries contribute significantly to the nation's economy, said Veneman, providing an estimated three million jobs. "This year, the value of livestock production in the United States is estimated at about \$101 billion, the second largest in history."

Veneman said pork, beef and poultry are three of the top ten fastest growing U.S. exports, noting that animal agriculture is increasingly important to the nation's trade balance.

She said the fact that the President's budget has supported record levels of funding for USDA's food-safety programs, and significant increases for agricultural protections systems, demonstrates that protection of the food supply is a top priority of the Bush Administration.

"In the opening days of this Administration, we confronted the outbreak of foot and mouth disease

in Europe, and we took significant actions to prevent the disease in this country," said Veneman. "The events of September 11, 2001, led to a greater focus on intentional threats to animal production and our food system," she continued.

Veneman said stepped up research into vaccine development and improved diagnostic measures, the establishment of the National Animal Health Laboratory Network, and a new emergency operations center in Maryland are aiding the country's pest and disease infrastructure and rapid-response efforts. "Last year, our systems were put to the test with major disease outbreaks of avian influenza in Virginia and exotic Newcastle disease in California and the southwest." She said the discovery of a single case of BSE in Canada in May of this year provided another test.

"All of these animal health issues point to the importance of the development of a National Animal Identification System, which is a key priority for USDA,



and I know it is for you, as well," Veneman told the audience of over 1,000 attendees. She said an effective animal identification system will help enhance the speed and accuracy of the U.S.' ability to respond to animal disease outbreaks.

"Together, we must develop a system that works."



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NIAA Urges Vigilance Among DHS Customs and Border Protection Officers

The establishment of U.S. Customs and Border Protection (CBP) within the new Department of Homeland Security (DHS) brought together employees from three departments of the federal government. Inside CBP, three different inspector occupations – the Customs inspector, the Immigration inspector and the Agriculture inspector – joined together at the nation's ports of entry.

To unify the duties and responsibilities of these occupations, DHS officials are creating a new position – the CBP Officer – a corps of officers who will present “one face at the border” to travelers and the importing community.

DHS officials say a single inspectional workforce will enable CBP to effectively carry out its priority mission – preventing terrorists and terrorist weapons from entering the U.S., while facilitating the flow of legitimate trade and travel – as well as performing the traditional missions of the three legacy agencies.

Inspections are being divided into passenger and cargo functions and, within the passenger function, inspectors may be stationed at sites of “primary” or “secondary” inspection.

So, what does this mean for agricultural inspections?

DHS officials say an extensive job analysis conducted by the agency showed that one officer could perform all of the primary and secondary functions that take place in the passenger environment and most of the work that takes place in the cargo environment.

However, the analysis also showed that the complexities of cargo examination of certain kinds of agricultural products requires such a specialized background that

a second position, the CBP Agriculture Specialist, is also being established to work with the CBP Officer in the cargo environment.

The CBP Agriculture Specialist position will complement the work of the CBP officers, officials say.

DHS will assign agriculture specialists to ports with large volumes of cargo importation, particularly flowers, fruit, vegetables, meat and other products of an agricultural interest.

Their assignment will be to apply their specialized backgrounds to support the CBP Officer in complex cargo examinations, pre-arrival risk analysis, and will be responsible for seizing, safeguarding, destroying, or re-exporting cargo. Agriculture Specialists will also coordinate with USDA which will continue to manage commodity pre-clearance operations, issue export certifications, identify pests, and oversee Plant Inspection Stations as well as fumigations and cold treatments.

Federal officials say the establishment of the CBP Officer is a “force multiplier” for agriculture inspection, providing a greatly expanded workforce of over 18,000 officers, trained to carry out important agriculture responsibilities in the processing of passengers and their baggage. Further, the CBP Agriculture Specialists who support the CBP Officer, will provide in-depth expertise in the analysis and examination of cargo.

Newly hired CBP Officers will receive agriculture training as part of their basic training. This will be followed by significant agriculture preparation, both classroom and on-the-job, in the port environment. Extensive cross-training will be provided to current inspectors as part of the conversion process.

This cross-training will include a substantial amount of agriculture training needed to carry out the functions of the CBP Officer.

Despite these assurances, a number of agricultural organizations, including the National Institute for Animal Agriculture (NIAA), have voiced concerns that agriculture specialists are being reserved for the “secondary” function of inspections.

In a recent letter to DHS Under Secretary Asa Hutchinson, who oversees border and transportation security, NIAA Chairman of the Board Kenneth E. Olson underscored the importance of maintaining a strong agricultural inspection presence and stressed the need for extensive training under the new inspection consolidation plan.

“We appreciate the efficiencies, coordination, and focus that can be achieved by combining the customs, immigration, and agricultural inspection personnel into ‘one face.’” Olson expressed concern, however, that these agricultural specialists will be focusing primarily on cargo-only inspections.

“While we agree this is a likely avenue for the potential introduction of a foreign animal disease – whether intentionally or unintentionally – we cannot stress the importance of maintaining vigilance by the CBP officers at the front line,” said Olson. “Their face-to-face efforts will be key in maintaining the security of our borders and keeping our nation free of foreign animal disease.”

Olson said NIAA strongly supports activities to assure that all Customs and Border Protection officers receive significant training on potential vectors for introduction of unwanted agricultural pests or disease.

APHIS Challenged with Increasing Risks, Decreasing Staff

How safe is American agriculture? With recent changes in trade protocols, the increased volume of international trade and travel, and the threat of bioterrorism, it's easy to be overwhelmed with concerns. Toss in wildlife diseases and emerging diseases, and the pressures on USDA's Animal & Plant Health Inspection Service (APHIS) to keep us all safe seem insurmountable.

"The current APHIS cadre of veterinarians and animal health professionals has been stretched to the limit handling the increased workload associated with trade obligations and emergencies," says Dr. Ron DeHaven, deputy administrator for USDA, APHIS, Veterinary Services (VS). "This huge demand on limited resources could place American agriculture, and potentially human health, at risk."

Current Animal Health Infrastructure

The U.S. government, including the uniformed services, cur-



Dr. Ron DeHaven
Deputy Administrator
USDA, APHIS, Veterinary Services

rently employs approximately 2,050 veterinarians. Over half, about 1,059, work for the Food Safety and Inspection Service (FSIS). Another 463 are in the uniformed services. APHIS employs 531 veterinarians; 99 are in either Animal Care or Plant Protection and Quarantine, leaving only 432 in VS. Of those, 322 work in the field, with the balance performing duties in laboratories, regional offices, and headquarters.

Since 1994, the number of field veterinarians has fallen from 404 to 322, a decrease of more than 20 percent.

"Reductions of this magnitude have stretched remaining resources beyond the point where they can be responsive to both ongoing work and emergencies," DeHaven says.

One very important part of the ongoing APHIS-VS work is the investigation of suspected foreign animal diseases (FADs). After 10 years of consistent demand for about 300 such investigations per year, numbers rose to 384 in 2000, 792 in 2001, 835 in 2002 and, as of November 20, 2003, 376 for fiscal year 2003.

"Responding quickly to reports of suspected FADs is nearly as important as responding quickly to actual disease outbreaks," DeHaven says. "The mere report of

a suspected case of foot-and-mouth disease can dramatically impact markets and if an FAD exists, a quick response can limit the magnitude of an outbreak."

Higher Trade Volume

The value of U.S. imports has doubled since 1993. With this steady upward trend in the num-

ber of products entering the country, the opportunity for exotic pests and diseases to grace us with their presence has increased accordingly.

Moreover, there was a 127 percent increase in international

arrivals in the U.S. from 1980-2000, including Americans traveling home from overseas, and foreign tourists and business passengers coming here.

"Each of these international travelers could potentially be bringing with them a prohibited product that harbors a FAD agent," DeHaven says.

"Since federal veterinarians have responsibilities in both the import and export areas, APHIS veterinarians have become more involved in importation issues related to commodity clearance, certification of disease-free status, and risk analysis," he reports. Reservoirs of infection in wild animals also offer a constant threat to domestic livestock populations, he adds.

"The mere report of a suspected case of foot-and-mouth disease can dramatically impact markets and if an FAD exists, a quick response can limit the magnitude of an outbreak."

Responding to Emergency Outbreaks

On a positive note, to minimize market losses from pests and diseases entering the country, APHIS has been increasing its access to and use of technology. Moreover, APHIS partners with states and other federal entities to ensure consistent data analysis capabilities, tracking systems, and compatible software and hardware.

APHIS recently opened a state-of-the-art Emergency Operations Center in Riverdale, MD for managing agricultural health emergencies.

"However, the recent Exotic Newcastle Disease (END) emergency in California has demonstrated the critical need to have more veterinarians and other animal health professionals available for quick deployment to the outbreak site," DeHaven says.

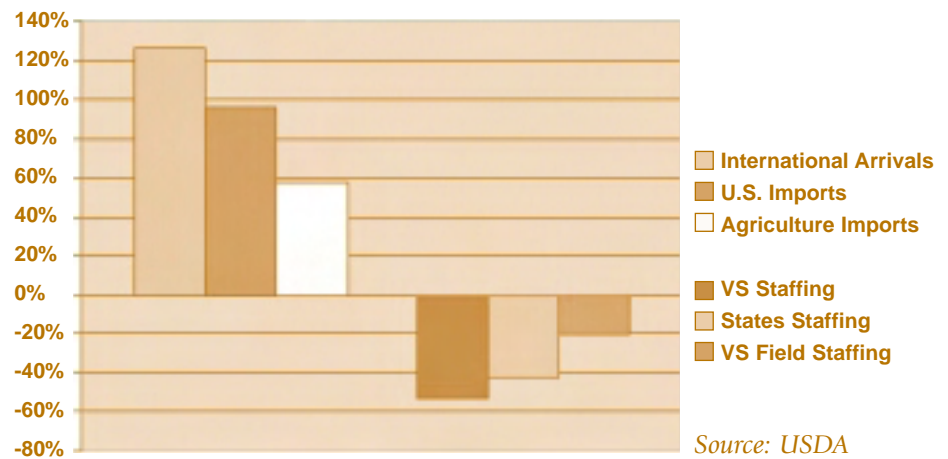
State and Local Government Animal Health Infrastructure

APHIS has traditionally relied on states to provide support for emergencies and hoped to do the same for the END program. However, 40 states have fewer animal health personnel today than they did 20 years ago. Key border states have seen dramatic reductions between 1983 and 2003: California from 95 animal health professionals to 74; Florida from 401 to 147; Texas from 334 to 201.

What's more, DeHaven points out, diseases are also now being found in urban settings, where normal farm biosecurity measures are not in place. "The bottom line is that states that receive a large amount of traffic from foreign countries are at a special risk," he says.

The number of animal health professionals in the agriculture sector is declining and so is the number of veterinarians. Specifically, the AVMA count of state and local

Increasing Risks, Decreasing Staff 1983-2003 Change



government veterinarians decreased from 740 in 1998 to 554 in 2002 (322 are state government veterinarians), a reduction of 25 percent.

Potential Solutions

APHIS has identified several ways to help address the problem of handling emergencies, a combination of which is probably necessary, DeHaven says. "However, the one essential component is to increase the number of veterinarians actually on board in APHIS and available for immediate deployment," he emphasizes.

To that end, APHIS is considering:

1. Creating a cadre of full time APHIS veterinarians whose primary responsibility would be emergency action to deal with animal pest and disease outbreaks.
2. Making the best possible use of contract veterinarians. "The level of contractor training in regulatory animal health is significantly lower than that of our permanent staff," DeHaven says, "so we would have to educate them in federal methods and procedures."
3. Enhancing the use of veterinarians from other federal and state agencies and hire temporary

employees on an as-needed basis.

4. Enhancing the use of accredited veterinarians to perform, for a fee, tasks such as monitoring caged birds remaining on dangerous contact premises in programs like END.
5. Making APHIS a more competitive employer.

APHIS is exploring the possibility of creating non-supervisory technical positions at higher pay levels, DeHaven says.

"We have exciting work in APHIS, not just in emergency response and preparedness, but also in tackling some of the endemic and emerging diseases," he relates enthusiastically. "More outreach to veterinary professionals will help us attract top notch people."

Linda L. Leake

If you are a veterinarian interested in USDA APHIS, Veterinary Services employment opportunities, VS Careers Program job announcements can be found at: www.aphis.usda.gov/vs/vs-cp.htm; APHIS job announcements can be found at www.aphis.usda.gov/mrpbjs/job_search.html, or contact Eileen Cramer, VS Management Support Staff, at 301-734-3826.

USAHA Accepts Animal Identification Plan

At its 107th Annual Meeting in October, the United States Animal Health Association (USAHA) endorsed a plan to implement a national system for animal identification as a work in progress.



The U.S. Animal Identification Plan (USAIP), as it is called, defines the standards and framework for implementing a phased-in national food animal and livestock identification program. It was refined over the past year by 95 individuals representing 70 industry groups as well as state and federal animal health officials working collectively as the National Animal Identification Development Team.

"We are pleased with the action of the USAHA," said Robert Fourdraine, co-chair of the National Animal ID Development Team Steering Committee and vice chair of the National Institute for Animal Agriculture's (NIAA) Animal Identification and Information Systems Committee. "With USAHA's acceptance, the next steps of finalizing the Plan may be taken. Specifically, comments on the USAIP are needed from individuals or groups within the animal agriculture industry and government so the Development Team may address suggestions and concerns as implementation plans are being developed."

In addition to the comment period, Species Working Groups are being formed to advance the USAIP through development of more precise details of transition, implementation, and continuity within a timeframe consistent with the goals of the Plan.

"Recognizing the differences in how various species are raised and marketed, these working groups will be vital in developing the needed steps necessary to transition into a national identification system within the overall standards of the USAIP," said Fourdraine.

States, industry, USDA, the USAHA committee on livestock identification and the National Institute for Animal Agriculture (NIAA) have been working in partnership on the plan for the past several years.

A comment period, ending Jan. 31, 2004, is now open for all interested individuals and groups to present their input and suggestions. A copy of the Plan is available at www.usaip.info. Comments may be emailed to *Communication*

@*USAIP.info*, faxed to 719-538-8847, or mailed to USAIP Comments, 660 Southpointe Court, Suite 314, Colorado Springs, CO, 80906. These comments will be taken into account for the next iteration of the plan. Comments will continue to be accepted as the plan is developed.

The National Animal Identification Development Team comprises a diverse group of livestock industry participants including producers, producers organizations, breed associations, marketers, and processors as well as state and federal animal health officials committed to the goal of developing a standardized national identification system to assist in rapid animal traceback in the event of an animal health emergency.

USDA Implements Electronic Health Certificate

The U.S. Department of Agriculture's (USDA) Centers for Epidemiology and Animal Health, a part of USDA's Animal and Plant Health Inspection Service's (APHIS), Veterinary Services (VS) program, is working with six states on a pilot project that would allow state and federal animal health officials to have instantaneous access to information regarding livestock movements in and out of their state.

Accredited veterinarians will be able to voluntarily use the Web-based Interstate Certificate of Veterinary Inspection (ICVI) via the Internet. An ICVI will be printed out to accompany the animal and the information will be transmitted electronically to the destination state.

By using an electronic Web-based application, accredited veterinarians, and state and federal animal health officials will be

able to electronically produce, transmit, and obtain reports of interstate animal movement information.

During the next several months, California, Colorado, Florida, North Carolina, Texas, and Wisconsin animal health officials, in partnership with USDA, will implement the electronic ICVI in their states. The ICVI software will be accessible at no cost from the USDA to the practitioners, as well as state and federal veterinarians. State fees may apply, depending upon the state.

USDA purchased an eight-year license for an ICVI software application from GlobalVetLink, LC, a provider of Internet applications.

For additional information, contact Teresa Howes at 970-494-7410 or send an e-mail to teresa.k.howes@aphis.usda.gov.

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USDA Amends National Poultry Improvement Plan

The U.S. Department of Agriculture has amended the National Poultry Improvement Plan and its auxiliary provisions by providing new or modified sampling and testing procedures for plan participants and participating flocks.

The changes were voted on and approved by the voting delegates at the National Poultry Improvement Plan's 2002 National Plan Conference. These

changes will keep the provisions of the plan current with changes in the poultry industry and provide for the use of new sampling and testing procedures.

The amendments are effective Dec. 15 and can be viewed on the Internet at www.aphis.usda.gov/vs/npip/pdfs/final-rule.pdf.

Tests Show Declining Levels of *Salmonella* in Meat, Poultry Products

The United States Department

of Agriculture recently announced that the rate of *Salmonella* in raw meat and poultry products dropped by 66 percent over the past six years and by 16 percent compared with 2002.

Of the random samples collected and analyzed between Jan. 1 and Oct. 31, 2003 by the Food Safety and Inspection Service, 3.6 percent tested positive for *Salmonella*, as compared with 4.29 percent in 2002; 5.03 percent in 2001; 5.31 percent in 2000; 7.26 percent in 1999; and 10.65 percent in 1998.

USDA recently announced data showing similar reductions in *E. coli* 0157:H7 in ground beef and *Listeria monocytogenes* in ready-to-eat meat and poultry products.

"These results show that we are making progress in our efforts to enhance meat and poultry inspection systems," said Agriculture Secretary Ann M. Veneman. "This is good news for consumers."

New Animal Health Policy Book Released

Global Livestock Health Policy: Challenges, Opportunities, and Strategies for Positive Action, by Robert F. Kahrs, was released this fall by Iowa State Press.

This book untangles the politics, policies and pressures that shape animal disease control, food safety, and trade in livestock and poultry products in a bioterrorism-threatened, unpredictable, and highly competitive global economy.

This reference is ideal for anyone involved in the production, processing, distribution and consumption of livestock products and their impact on global stability.

It can be ordered at www.iowastatepress.com; by calling 1-800-862-6657; at Amazon.com, or at your local bookstore.

HHS Issues New Rules to Enhance Security of the U.S. Food Supply

Health and Human Services Secretary Tommy G. Thompson has announced the issuance of two Food and Drug Administration regulations that are intended to bolster the safety and security of America's food supply. The new regulations will enable better targeted efforts to monitor and inspect imported foods and will allow quick identification and notification of food processors and other establishments involved in any deliberate or accidental contamination of food.

The two new regulations will implement key provisions of the Public Health Security and Bioterrorism Preparedness and Response Act of 2002, which provided FDA new authority to protect the nation's food supply against actual or threatened terrorist acts and other food-related emergencies.

The first regulation requires food importers to provide the FDA with advance notice of human and animal food shipments imported or offered for import on or after Dec. 12, 2003. This will allow FDA to know, in

advance, when specific food shipments will be arriving at U.S. ports of entry and what those shipments will contain. This advance information will allow the FDA, working with U.S. Customs and Border Protection (CBP), to more effectively target inspections and ensure the safety of imported foods. The FDA expects to receive about 25,000 notifications about incoming shipments each day.

The second regulation requires domestic and foreign food facilities that manufacture, process, pack or hold food for human or animal consumption in the United States to register with the agency by Dec. 12, 2003. As a result, FDA will have for the first time a complete roster of foreign and domestic food facilities. The requirements will enable the FDA to quickly identify and locate affected food processors and other establishments in the event of deliberate or accidental contamination of food. The FDA expects about 420,000 facilities to register under this requirement.

President Signs Bill to Assist Veterinary Graduates

President George W. Bush signed into law the National Veterinary Medical Services Act on Dec. 6. The legislation, drafted and sponsored by Mississippi Congressman Chip Pickering, will provide student loan repayment to veterinary school graduates who agree to work in underserved areas of the country. Senator Thad Cochran, also of Mississippi, sponsored the Senate companion legislation.

This act will place veterinarians in underserved areas of the country in need of veterinary health care by offering veterinary students grants to assist in repaying educational debts. Eligible students will enter into agreements with the Secretary of Agriculture that will place them in shortage areas, to

include rural and inner-city areas, for specified lengths of time. In return, students will receive repayment of portions of their educational loans.

In addition, this act will establish a 'national guard' of veterinarians. In exchange for additional debt repayment, eligible students can enter into further agreements with the Secretary to assist USDA in addressing disease outbreaks, agro-terrorist threats or similar emergency situations determined by the Secretary. The Secretary would be able to mobilize these volunteers to investigate and/or manage suspicious outbreaks.

"Veterinarians are highly qualified medical individuals that first notice and diagnose developing

health patterns in animals," said Dr. John Thomson, Dean of Mississippi State University's College of Veterinary Medicine. "These first responders in the field are our front line defense against foreign or domestic disease epidemics and agro-terrorism threats. Long before the laboratory technician or the college research facility begins their work, veterinarians have already encountered the challenges."

The National Veterinary Medical Services Act has been a work in progress since its original inception in October 2000, and was strongly supported by the American Veterinary Medical Association and the Association of American Veterinary Medical Colleges.

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