



# Avian Science Notes

University of California • Cooperative Extension

April 2002

## Avian Influenza

An H6N2 avian influenza virus is currently circulating in California poultry. This virus has been classified as a low pathogenicity strain by official USDA testing. It is highly contagious and can easily infect chickens and other avian species. The clinical signs of infection with this virus include cessation of egg production, and in rare cases, death. Some birds may sneeze or have other signs of respiratory disease. If you suspect avian influenza in your flock, then contact your veterinarian to have your birds tested. Additional information on avian influenza is available online at [http://www.vetmed.ucdavis.edu/vetext/INF-PO\\_AI-Intro.html](http://www.vetmed.ucdavis.edu/vetext/INF-PO_AI-Intro.html). Questions about avian influenza can be directed to Dr. Carol Cardona, Poultry Extension Veterinarian (530-754-5041).

Avian influenza is caused by type A influenza virus. The symptoms can vary from a mild disease with little or no mortality to a highly fatal, rapidly spreading epidemic (highly pathogenic avian influenza) depending on the infecting virus strain, host factors, and environmental stressors.

### Hosts

More avian influenza (AI) viruses have been isolated from ducks than any other species although most free-flying birds may also be infected including shorebirds, gulls and other seabirds. Waterfowl are more resistant to AI than are domestic poultry. Viruses that cause no obvious disease in waterfowl can be highly pathogenic (rapidly fatal) in domestic poultry. Among domestic poultry species, turkeys are more commonly infected than are chickens.

### Transmission

Waterfowl act as a reservoir of AI virus by carrying the virus in their intestinal tract and shedding it in their feces. AI viruses are spread to susceptible birds through inhalation of influenza particles in

nasal and respiratory secretions and from contact with the feces of infected birds.

### Signs of disease

Signs of AI are extremely variable. In some flocks the only evidence of the infection is seroconversion i.e., the birds develop a detectable antibody titer to AI. AI can also be manifest as respiratory, enteric, reproductive or nervous system disease. Decreased food consumption and drops in egg production are among some of the earliest and most predictable signs of disease.

Signs including coughing, sneezing, ruffled feathers, swollen heads, nervous signs like depression, and diarrhea may occur together or singly. In some cases, birds die rapidly without clinical signs of disease.

### Prevention and control

Wild birds and their excreta should be considered a major source of AI. Preventing direct contact with free-flying birds and protecting domestic poultry from contact with the feces of wild birds is an important way to prevent AI.

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University of California and the United States Department of Agriculture cooperating

Live bird markets have been an important source of AI, especially on the East coast of the U.S. It is important to avoid live markets and auctions when possible and to educate employees about the dangers posed by these markets. When taking birds to a live bird market or auction, it is important to not bring home diseases like AI.

Infected birds shed virus in saliva, nasal secretions and feces in the first two weeks of infection. Four weeks after infection, virus can no longer be detected although the birds will be seropositive. Hence, prevention is best accomplished by preventing contact between newly infected and susceptible birds. Biosecurity is a first line of defense (see *Biosecurity for Poultry Flocks*, J. Jeffrey, UC Davis Extension Poultry Veterinarian [[http://www.vetmed.ucdavis.edu/vetext/INF-PO\\_Biosecurity.html](http://www.vetmed.ucdavis.edu/vetext/INF-PO_Biosecurity.html)]). AI can be spread from infected birds through the transfer of feces especially on contaminated equipment and clothing. Controlling the traffic between infected and uninfected birds is essential.

### **Cleaning and disinfection**

Influenza viruses are very sensitive to most detergents and disinfectants. They are readily inactivated by heating and drying. However, flu viruses are well-protected from inactivation by organic material and infectious virus can be recovered from manure for up to 105 days. Complete removal of all organic material is part of any effective disinfection procedure.

Contaminated houses are heated for several days to inactivate virus. Organic material is removed followed by complete cleaning and disinfection of all surfaces. Contaminated litter and manure is problematic and should be composted or buried to ensure that it does not spread infectious virus.

### **Frequently asked questions**

1. Are the flu viruses of humans and birds the same?

In most cases, the influenza viruses that infect birds do not infect humans and vice versa. However, in Hong Kong in 1997, a unique AI virus infected both chickens and humans. This appears to have been a unique occurrence but, just in case, the World Health Organization continuously monitors human influenza viruses isolated from cases all over the world for avian viruses.

2. What are the risks of getting avian influenza from waterfowl?

Avian influenza virus infections are widespread in wild birds, especially ducks. Migrating waterfowl are a significant source of avian influenza viruses especially in the major flyways. Turkeys on open ranges in Minnesota, a state in the major flyway for migrating ducks, frequently experience AI problems. But the prevalence of AI in turkeys has been high in some years and minimal in others. The reason why influenza viruses come and go is not known. The risk to susceptible birds from contact with waterfowl must be considered very high although it may vary from year to year for unknown reasons.

3. Why can't I vaccinate my flocks?

Vaccines effectively prevent the clinical signs of influenza infections in many species including poultry. However, the vaccines are not cross-protective for the 15 virus subtypes that can infect poultry. Since there is no way to predict which type will infect a flock, vaccines are generally not practical to prevent or limit infections.

4. What should I do if I suspect avian influenza in my birds?

You should contact your veterinarian if you observe any of the signs of AI, especially if they are accompanied by a drop in feed consumption and/or a significant drop in egg production. Because the signs of AI are so variable, it is important to get the help of an expert for diagnosis.

***Dr. Carol Cardona***  
***Poultry Extension Veterinarian***

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***Dr. Carol Cardona***  
***Poultry Extension Veterinarian***

## 2002 Egg Preparation Demonstration Contest Qualifier

California's Egg Preparation Demonstration Contest will be held Tuesday, August 6th at U.C. Davis. This will be the second year for California to hold a qualifier to choose **ONE** 4-Her who will represent California at the National 4-H Poultry & Egg Conference this November in Louisville, Kentucky.

You must be a Senior 4-H member to qualify for Kentucky. That is, you must be 14-18 years old as of January 1, 2002.

Juniors may enter, but they compete for the experience only. In addition to submitting a recipe prior to the contest (need not be your recipe), each contestant must submit the complete, **typed** text of everything s/he will say while presenting a demonstration on the preparation of the dish.

In order to allow for greater participation, contestants will be asked to bring one **prepared** dish from home and then be prepared to demonstrate dish preparation in front of the judges. This eliminates the need for a kitchen.

The demonstration must include the following:

a Information on eggs: nutritional value, preparation and storage, functional properties, grading and sizing, production, versatility, and economics of cooking with eggs.

b. Steps in preparation of the dish.

c. A finished dish (prepared at home for the Qualifier) ready for sampling. Judges will be served and will sample each finished product at the conclusion of each demonstration. The demonstration must be no more than 12 minutes in length. An additional 3 minutes will be provided for the judges to ask questions.

Only those **seriously** interested in participating on August 6th should request a full packet. You may do this by calling or writing Extension Assistant, Susie Reichel, Animal Science Department, University of California, Davis, CA 95616; telephone (530) 752-9040.

Packets will be sent out in May.

### Poultry Judging Champions

Qualifying to represent California this coming November at the 4-H nationals in Louisville were Marta Kroger, Samantha Downey, Megan Peters, Sara Leisgang and Sam Silva. They were coached by Mrs. Julie Kroger.

The Qualifier, under the direction of Dr. Ralph Ernst, ran smoothly with much hard work by student coordinator, Daniel Ryan, Student Assistants Jamie Lynd and Brigid McCrea, Lester Fuqua, and Mrs. Jan James. Mrs. Smoke of the Greater California Society of Poultry Fanciers was a wonderful host and helped coordinate our on-site volunteers.

## **2002 Avian Bowl Qualifier**

This year's qualifier will be held on Tuesday, August 20th during the Junior Poultry Show at the California State Fair. Check-in time is 5:00 p.m. and the competition will begin at 6:00 p.m.

The Avian Bowl Qualifier forms are included in this newsletter on pages 5 and 6. **PLEASE NOTE THERE IS A SEPARATE FORM FOR JUNIORS AND SENIORS. THE FORMS MUST BE RECEIVED IN OUR OFFICE OR POST-MARKED BY JULY 15.**

## **2002 Avian Bowl Study Sections**

	<u>Pages</u>
Understanding the Food Poisoners	17-20
Avian Systems: Skeletal, Respiratory, Digestive, Feathers	40-44
Breeds, Varieties & Strains: English, Mediterranean	73-77
Game Birds: Entire Section	81-100
Eggyclopedia: Cooking Function through Games	114-127
New Embryology Section (to be added)	

**Note: These study sections will not be used until the Qualifier in August 2002**

## **Ordering New Revised (February 2002) Avian Bowl Manuals**

Manuals are available now for \$12.00 from Clemson University. Call 864/656-3261 for ordering information.

Availability through ANR Publications, University of California, 6701 San Pablo Avenue, Oakland, CA 94608-1239 may be delayed. Call for availability and price 1-800-994-8849. **Be sure they have 2002 Revised edition.**

## **Thank You**

Your editor wishes to thank all who helped make Avian Science Day 2002 a success. The 4-H members who assisted with registration and materials dispersal did a tremendous job. Thank you for volunteering weeks in advance, for arriving hours before the event, and staying until the day's clean-up was completed.

The hard-working members of the Avian Sciences Club were most generous in providing their time and making a significant contribution to hospitality.



## **Japanese Chicken Art Update**

Dr. Melinda Takeuchi of Stanford's Department of Art, gave an excellent presentation at Avian Science Day. Many in the audience were interested in seeing more of the artwork. As promised, Dr. Takeuchi has provided the website information.

[www.shinenkam.com](http://www.shinenkam.com) is the recommended website. Once there, go to "Artists" and then to "Jakucho."

**2002 Avian Bowl Qualifier**

Tuesday, August 20th (check-in 5:00 p.m.) Contest begins at 6:00 p.m.

**JUNIOR ENTRY FORM**

**4-H Avian Bowl Contest Entry Form**

**FORMS WILL NOT BE ACCEPTED WITHOUT COMPLETE BIRTH DATE FOR EACH MEMBER**

***Entries must be postmarked by July 15, 2002***

**Juniors must have completed third grade by July 1, 2002 and must be younger than 14 years of age on January 1, 2002.**

County \_\_\_\_\_

Team One name \_\_\_\_\_

Team members' names:

Month/day/year

1. \_\_\_\_\_ Birth date \_\_\_\_\_

2. \_\_\_\_\_ Birth date \_\_\_\_\_

3. \_\_\_\_\_ Birth date \_\_\_\_\_

4. \_\_\_\_\_ Birth date \_\_\_\_\_

Alternate \_\_\_\_\_ Birth date \_\_\_\_\_

Coach Name \_\_\_\_\_ Address \_\_\_\_\_

City \_\_\_\_\_ Zip \_\_\_\_\_ Phone # \_\_\_\_\_

Team Two name \_\_\_\_\_

Team members' names:

Month/day/year

1. \_\_\_\_\_ Birth date \_\_\_\_\_

2. \_\_\_\_\_ Birth date \_\_\_\_\_

3. \_\_\_\_\_ Birth date \_\_\_\_\_

4. \_\_\_\_\_ Birth date \_\_\_\_\_

Alternate \_\_\_\_\_ Birth date \_\_\_\_\_

Coach Name \_\_\_\_\_ Address \_\_\_\_\_

City \_\_\_\_\_ Zip \_\_\_\_\_ Phone # \_\_\_\_\_

**Send entries to: Dr. Francine Bradley, Animal Science, UC Davis,  
Davis, California 95616-8521; FAX (530) 752-8960.**

**2002 Avian Bowl Qualifier**

Tuesday, August 20th (check-in 5:00 p.m.) Contest begins at 6:00 p.m.

**SENIOR ENTRY FORM**

4-H Avian Bowl Contest Entry Form

**FORMS WILL NOT BE ACCEPTED WITHOUT COMPLETE BIRTH DATE FOR EACH MEMBER**

***Entries must be postmarked by July 15, 2002***

**Seniors must be 14 to 18 years old as of January 1, 2002.**

County \_\_\_\_\_

Team One name \_\_\_\_\_

Team members' names:

Month/day/year

1. \_\_\_\_\_

Birth date \_\_\_\_\_

2. \_\_\_\_\_

Birth date \_\_\_\_\_

3. \_\_\_\_\_

Birth date \_\_\_\_\_

4. \_\_\_\_\_

Birth date \_\_\_\_\_

Alternate \_\_\_\_\_

Birth date \_\_\_\_\_

Coach:

\_\_\_\_\_

Name

Address

\_\_\_\_\_

City

Zip

Phone #

Team Two name \_\_\_\_\_

Team members' names:

Month/day/year

1. \_\_\_\_\_

Birth date \_\_\_\_\_

2. \_\_\_\_\_

Birth date \_\_\_\_\_

3. \_\_\_\_\_

Birth date \_\_\_\_\_

4. \_\_\_\_\_

Birth date \_\_\_\_\_

Alternate \_\_\_\_\_

Birth date \_\_\_\_\_

Coach

\_\_\_\_\_

Name

Address

\_\_\_\_\_

City

Zip

Phone #

**Send entries to: Dr. Francine Bradley, Animal Science, UC Davis,  
Davis, California 95616-8521; FAX (530) 752-8960.**

## Upcoming Ethics Training

### Monday, June 17

Southern California Exposition at Del Mar. Check in with Dr. Bradley at Poultry Building by 2:00 p.m. **Must call Dr. Bradley (530/752-6316) to pre-register.**

### Monday, July 15

Orange County Fair. Must pre-register by contacting Joanne Kellogg at Orange County Fair (714/708-1595).

## 2002 Calendar

### **July 15**

Avian Bowl entries due in Dr. Bradley's office or postmarked by July 15, 2002.

### **August 6**

4-H Egg Preparation Demonstration Qualifier, U.C. Davis (see article on page 3 of this newsletter).

### **August 19-22**

Junior Poultry Show, California State Fair.

### **August 20**

Avian Bowl Qualifier, California State Fair. Check-in 5:00 p.m.; contest begins at 6:00 p.m. (see article on page 4 of this newsletter).

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