

California Poultry Letter

July 1997

Municipal Wastewater Pathogens

Some readers may be aware of the California egg producers whose layers were found to be infected with *Salmonella enteritidis* phage type 4 (SEPT4). Work by Dr. Hilu Kinde of the California Veterinary Diagnostic Laboratory System in San Bernardino demonstrated that the source of the infection was effluent from a municipal sewage treatment plant. Since that discovery, Dr. Kinde and co-workers have tested the effluents from 12 sewage treatment plants in Southern California. Their findings were just published in the Avian Diseases journal (Kinde, H., M. Adelson, A. Ardans, E.H. Little, D. Willoughby, D. Berchtold, D.H. Read, R. Breitmeyer, D. Kerr, R. Tarbell, and E. Hughes, 1997. Prevalence of *Salmonella* in municipal sewage treatment plant effluents in Southern California (Avian Dis. 41:392-398).

When water samples were collected at the chlorination/dechlorination site inside the sewage treatment plant, 8 out of 12 plants were positive for *Salmonella*. Even more alarming was the fact that when the samples were taken from plant effluent, outside of the plant but before it reached the receiving stream, 11 of the 12 plants were found to be positive. During the sampling process the investigators observed citizens swimming and fishing in the effluent within 100 ft. of the outfall from the sewage treatment plant.

Dr. Kinde points out in the article that estimating the number of *Salmonella* need to cause an infection is a difficult task. The virulence of the particular *Salmonella* has to be considered, as well as the immunocompetency of the human ingesting the *Salmonella*-positive **water/food/etc.**

Dr. Kinde and his co-workers from CVDLS, the California Regional Water Quality Control Boards, the California Department of Food and Agriculture, and Los Angeles County Public Health Services are to be thanked for their efforts in demonstrating these sources of *Salmonella* and for helping to increase awareness.

Survival of Pathogens in Wastewater

According to Joseph Salvato, Environmental Engineering and Sanitation and U.S. Environmental Protection Agency, wastewater pathogens that fail to be inactivated or extracted during the wastewater treatment process, can survive in water for extended periods of time. Salvato states that such pathogens in the effluent have the potential to enter the drinking water supply of a nearby community or residence. The survival time (some as long as an alarming 18 months) are listed in the chart on page 2.

Pathogen	Disease	Survival Time	
		in Surface Water	in Ground Water
Bacteria			
Cryptosporidium spp. oocyst	Cryptosporidiosis	18 months+(at 4°C)	2-6 months, moist
E. coli	Colitis	---	10-45 days
Entamoeba histolytica	Amebiasis	1 month	---
Giardia lamblia cyst	Giardiasis	1-2 months, up to 4	---
Salmonella paratyphi	Paratyphoid fever	---	60-70 days
Salmonella typhi	Typhoid fever	1 day-2 months	8-23 days
Vibrio cholerae	Cholera	5-16 days*	---
Viruses			
Hepatitis A	Hepatitis	1+ year at 4°C in mineral water	
		399+ days at room temperature	
*longer in certain conditions			

Sources: Joseph a. Salvato, *Environmental Engineering and Sanitation*, and U.S. Environmental Protection Agency (SMALL FLOWS, Spring 1997; Vol. 11, No. 1)

“Where the Deer and the Antelope Play...”

We all realize that human presence can have negative impacts on the populations of wild birds and other animals. Governmental agencies too numerous to count have tried to legislate protection for those creatures **from** humans.

But who protects one animal against another or the grower who is trying to shepherd one animal population? Case in point is Roger Buym, a clam producer in the Chesapeake Bay region of Virginia.

Mr. Buym was close to business failure due to the amount of his property that had been condemned for shell fish harvesting because of contamination.

It is well known that human wastes and other agricultural operations can produce fecal coliform contamination. However, Mr. Buym’s location was a remote, virtually uninhabited area.

To the rescue came Professor George Simmons, Jr. of the Biology Department at Virginia Polytechnic Institute and State University in Blacksburg, Virginia. Through a laborious and time-consuming process, Professor Simmons used DNA fingerprinting

of *E. coli* to trace the source of the coliform contamination. He was able to identify deer and raccoons as the primary sources of the *E. coli*. Following this discovery, hundreds of deer, raccoon, and muskrat were removed from the Buym property. In less than one half a year the fecal coliform counts were decreased by one or two orders of magnitude and the tidal creeks were reopened.

Congratulations to Professor Simmons for his outstanding investigative work on behalf of the clam producer. More information can be obtained from Professor Simmons at (540) 23 1-6407.

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Congratulations California Egg Commission

Jack Sirard, the "Business Insider" for the Sacramento Bee newspaper recently had very high praise for the California Egg Commission's marketing campaigns. In his June 26th column he wrote, "Few commodity-promoting agencies in California do their jobs with as much panache as the California Egg Commission." He continued on to describe and compliment the current promotion of deviled eggs.

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Well Done

Hearty congratulations go out to Associate Professor Pat Wakenell. Pat has just received tenure in the Department of Population Health and Reproduction in the School of Veterinary

Medicine at the University of California, Davis.

Since arriving at Davis, Professor **Wakenell** has conducted meaningful poultry health research and has been a tireless teacher of undergraduate, graduate and professional students.

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Value of 4-H Poultry Programs

Your editor often fields questions regarding the long term benefits of youth programs devoted to poultry. Do any of these children really pursue formal training in poultry? A Poultry or Avian Sciences degree? Or a job in the poultry industries?

The Avian Sciences Major at U.C. Davis is delighted that Emily Moore and **Nora** Elsawly of San Diego County have been accepted as Freshmen in Avian Sciences this Fall. At the annual meeting of the Pacific and Poultry Association (**PePa**) it was announced that **Nora** is receiving one of **PePa's** Incoming Freshmen Scholarships.

Emily and **Nora** both represented California at the National 4-H Poultry and Egg Conference in Kentucky. Their team captured the National Avian Bowl Title. The team will be reunited this Fall since their third teammate, Erika Borg, will be a sophomore in Avian Sciences.

So, yes, some of the poultry 4-Hers do make poultry their career path. And for that we are very grateful.

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Poultry Representation on Foreign Animal Disease Advisory Committee

Agriculture Secretary Dan Glickman has announced his new appointments to USDA's Advisory Committee on Foreign Animal and Poultry Diseases.

The charge of the Committee is to advise the Secretary on policy necessary to prevent the introduction of foreign animal and poultry diseases into the United States. In addition, committee members work on recommendations for emergency disease outbreak management.

The poultry industries have three representatives on the twenty member committee. They are Dr. Richard Breitmeyer of the California Department of Food and Agriculture, Dr. G. Thomas Holder of Allen's Hatchery, and Dr. Charles Beard of U.S. Poultry and Egg Association.

Continuing to Feed the World

According to the United States Department of Agriculture (USDA) our total agricultural exports for fiscal year 1997 (ends on September 30) will be slightly lower than 1996, but still higher than 1994. Lower prices and higher foreign supplies of some ag commodities are responsible for this picture.

Poultry and poultry products, however, continue to increase in the export market. Projections are for **\$3.0** billion worth of product to be exported this year, an increase of 11.1% **from** 1996. **Our** number one foreign consumers by geographic region will continue to be Asians.

Summer Reading

The Poultry Science Association (**PSA**) has just announced the sale of its newest publication, a lab manual entitled **Techniques for semen evaluation, semen storage, and fertility determination.** The step-by-step manual takes the reader through such topics as semen collection, sperm motility, semen cryopreservation, and predicting fertility. The manual was edited by Dr. Murray Bakst of the Germplasm and Gamete Physiology Laboratory, USDA-ARS, Beltsville and the late Dr. Helene Cecil.

To order, send a check for \$12.00 payable to "**PSA**" (includes shipping and handling) to PSA, 1111 North **Dunlap** Avenue, Savoy, IL 61874.

Arthur Craigmill, Extension Toxicologist at U.C. Davis, has a suggestion for a book to add to your summer reading list. **Why our food is safer through science.** **Fallacies of the "chemical threat,"** is the most recent work of North Carolina State University distinguished Professor, Jim Riviere. Professor Riviere holds both a doctorate in pharmacology and a doctorate in veterinary medicine.

A prolific writer, Professor Riviere sets out in his book to educate and calm readers who may have become unduly frightened about the safety of their food due to **sensationalized** stories in the media. Information is provided in a factual and logical manner. The reader is also instructed in the area of risk assessment, a scientific method of analyzing if a chemical does pose a risk to our health.

For information on ordering, contact Research Triangle Publishing, P.O. Box 1130, Fuquay-Varina, NC 27526; toll free 1-800-941-0020; Fax (919) 557.2161.

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New Spanish Video on Poultry Vaccination

Companies needing instructional material in Spanish, will be pleased to learn that Intervet, Inc. now has a Spanish language version of its "Proper Vaccination Injection Techniques" video. Intended for those involved in breeder pullet and commercial layer operations, the video contains footage on six different methods of vaccine administration.

A copy of the video can be obtained by calling Inter-vet at 1-800-992-805 1.

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1997 Calendar

August 3, National Poultry Extension Workshop, University of Georgia, Athens. For more information call (217) 356-3 182.

August 3-6, Annual meeting of the Poultry Science Association, University of Georgia, Athens. For more information call (2 17) 356-3182.

August 18-21, California State Fair Junior Poultry Show, Fur and Feathers Building, Cal Expo, Sacramento.

August 26, Fall Turkey Conference, Parlier. For more information call John Voris (209) 646-6548.

August 29-September 1, California State Fair Open Poultry Show, Fur and Feathers Building, Cal Expo, Sacramento.

September 17-18, Poultry Production and Health Seminar, Atlanta Hilton Downtown. For more information contact U.S. Poultry and Egg Association, 1530 **Cooledge** Road, Tucker, GA 30084; (770) 493-9401.

September 25-26, California Poultry Industry Federation Annual Meeting, Holiday Inn Centre Plaza, Fresno, CA. For more information call (209) 576-6355.

October 16-18, Ag in the Classroom California Conference X, Bahia Hotel, San Diego, CA. For more information call 1-800-700-AITC.

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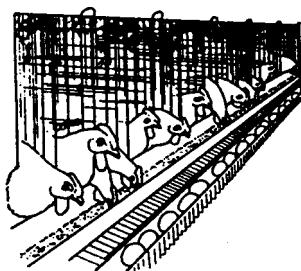
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