



# POULTRY PONDERINGS



A QUARTERLY NEWSLETTER SUMMARIZING POULTRY RELATED WORK AT UC

## Second Year UC Davis Veterinary Medicine Students Visit Sunrise Farms

by Dr. Rodrigo Gallardo

Nine veterinary students visited Sunrise Farms in March as part of their second year clinical rotation at the UC Davis Veterinary Medicine Teaching Hospital (VMTH). Jim Carlson, live production manager and co-owner of the company accompanied by Dr. Gregg Cutler escorted the students through a visit that included brooder, pullet and laying hen barns (conventional, and cage free). In addition, students learned about biosecurity, saw a vaccination crew and learned about various production methods. The visit ended with a tour of the egg packing facility. Overall students were impressed with the level of technology and the



professionalism in which modern egg production is performed. In addition, while all the students at this time are primarily interested in small animal medicine, they were excited to gain exposure to poultry production and medicine. These second year clinical rotations are part of the new curriculum implemented at UC Davis veterinary school. They are intended to expose students to novel veterinary experiences early in their veterinary curriculum.

## Improving Pathogen Inactivation During Carcass Composting

by Dr. Pramod Pandey

The Center for Food Animal Health (CFAH) has funded a research project for studying pathogen inactivation associated with poultry carcasses during composting. While the benefits of composting and carcass composting are well established, concerns have been raised as to the actual level of pathogen control for material that is eventually land applied as an amendment for crop production. Existing knowledge and peer reviewed literature regarding pathogen inactivation during the poultry carcass composting process is limited. The proposed research will identify pathogen inactivation rates for traditional composting methods and various secondary treatments designed to further inactivate pathogens following composting. The CFAH funded research will provide valuable insights for improving the composting processes and enhancing the safety of food and water in California. Assistant Specialists Pramod Pandey (PI) and Maurice Pitesky (Co-PI) from UC Davis, are the lead investigators. CFAH has granted \$20,000 for the research project which is intended as seed money to generate pilot data in order to facilitate larger funding.

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QUESTIONS OR COMMENTS

# Increased Incidence of Gizzard Erosions in Broiler Chickens and Turkeys - A Consequence of Modern Poultry Farming?

By Dr. H. L. Shivaprasad, CAHFS, Tulare

The gizzard (i.e. the ventriculus) is the muscular stomach of most species of birds that functions in grinding of feed in order to facilitate digestion. Even though the gizzard does not contribute any enzymes or gastric juice, it is the primary organ associated with proteolysis (i.e. protein breakdown). Therefore, any damage to the gizzard lining or the underlying mucosa and muscular layers can cause maldigestion resulting in poor absorption of nutrients in the intestine. This in turn can result in decreased weight gain and other consequences in broiler chickens and turkeys. It has been observed that in the past several years there is an increased incidence of gizzard erosions in broiler chickens and turkeys grown as antibiotic free or organic. There are many causes for gizzard erosions but one of the causes is probably due to modern farming practices.



Specifically, there is increased pressure within production medicine to decrease the use of antibiotics as growth promotants for the fear that the use of antibiotics may result in antibiotic resistance. At the same time there is also an increased demand by the consumers for poultry grown without the use of antibiotics. Therefore, in order to keep bacterial counts low, the poultry industry uses prebiotics, probiotics as well as various organic acids and chemicals like chlorine dioxide, hydrogen peroxide, copper sulfate, *etc.*, in the drinking water. The organic acids and chemicals are probably safe if used in proper concentration but can result in gizzard erosions and other consequences if used in excess.

## New UC Poultry Cooperative Extension Website

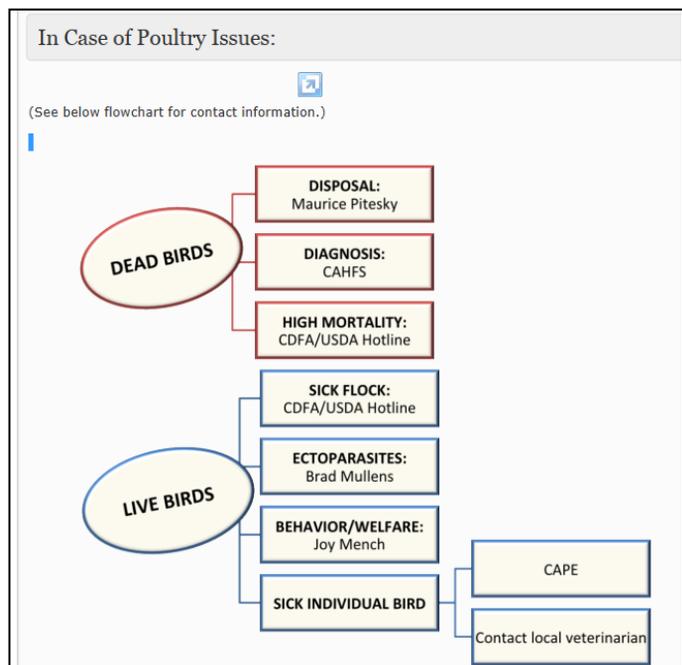
by Dr. Maurice Pitesky

UC Cooperative extension has a new poultry website dedicated to providing information to commercial and backyard producers alike. One example of a new resource is a diagram (pictured at right) where poultry owners can identify a problem and find the appropriate contact information at UC to help address their specific poultry related issue.

The web address for the site is:

<http://ucanr.edu/sites/poultry/>

Please take a look, bookmark and if you have questions, comments and especially suggestions please contact Maurice Pitesky at 530-752-3217 or [mepitesky@ucdavis.edu](mailto:mepitesky@ucdavis.edu). Second year veterinary student Radhika Gharpure is the webmaster.



## **Diatoms as a Novel Adjuvant for Vaccines Applied via the In-ovo Route in Poultry**

By Dr. Rodrigo Gallardo

A multidisciplinary group of investigators across California (UC San Diego, Scripps Oceanography Institute and UC Davis) have been working on the potential use of Diatoms as vaccine candidates for use in poultry. Diatoms are single cell eukaryotic microalgae present in aquatic habitats. Frustule, the silica cell wall of the diatoms, is expected to potentiate immune responses in chickens after vaccine application. The most fascinating characteristic is that diatoms may provide an expression platform for proteins capable of inducing protective immune responses against poultry or food safety pathogens. Preliminary experiments have been performed by Dr. Rodrigo Gallardo in order to determine the consequences of application of this diatoms in ovo. No toxic effects were detected after its application in ovo at 18 days of embryonation. These preliminary results were presented at the Western Poultry Disease Conference last April.

### **Getting Ready to Hatch ...**

The 5th annual **Davis Tour de Cluck** will be held on May 24<sup>th</sup>, This year's activities will encompass the whole month of May, starting with "Chicken Skool" talks. For more information please visit: <http://tourdecluck.org/>

The California Poultry Federation, the official state agency for the National Poultry Improvement Plan is sponsoring a **Backyard Flock Workshop** May 31<sup>st</sup> at the Stanislaus County Ag Center in Modesto California. For further information please contact Monica Della Maggiore at 209-576-6355 or [monica@cpif.org](mailto:monica@cpif.org)

### **"Backyard Flock Program" at the California Animal Health and Food Safety Laboratories**

By Asli Mete, CAHFS, UC Davis

A free-of-charge necropsy service for backyard chickens, namely the "Backyard Flock Program", has been implemented at the California Animal Health and Food Safety (CAHFS) Laboratories since the late 1980's. The program is funded by California Department of Food and Agriculture in order to secure early detection and rapid response against the two foreign avian diseases throughout the state: Highly Pathogenic Avian Influenza and Exotic Newcastle Disease. Nevertheless, the ever-increasing popularity of backyard chicken keeping has raised the number of submissions tremendously, as demonstrated in the recent "Popular Backyard Flock program reduces biosecurity risks of amateur production" publication in the California Agriculture journal, 2013. According to the state-wide counts of necropsies performed by the laboratory system, the currently experienced "backyard chicken boom" is reflected in the 383% increase in submissions over the past six years. The article also compiles the current legislature information in California, as well as giving an overview of diseases observed in backyard chickens. Accordingly, the digestive tract was the most commonly affected organ system (32.5%), while Marek's disease was the most commonly observed diagnosis of all.

**POULTRY PONDERING  
PONTIFICATIONS**

If arachnophobia is fear of spiders what is the technical term for fear of chickens???



Answer to last quarter's trivia: Ptarmigan is the town in Alaska that Chicken, Alaska was "supposed" to be named.