



POULTRY PONDERINGS



A QUARTERLY NEWSLETTER SUMMARIZING POULTRY RELATED WORK AT UC

UC Davis Starts New Pastured Poultry Research, Innovation and Outreach Farm

Maurice Pitesky and Deb Neimeier

In a collaborative effort between 5 departments, UC Davis has started a 4.5 acre pastured poultry farm to help address many of the challenges these farms face with respect to biosecurity, food safety, environmental management, predator control, and farmer ergonomics and business management.

Recent outreach efforts have identified over 80 commercial pastured poultry farms in California. Traditional outreach efforts have not been effective toward working with this segment of poultry production. The UC Davis effort is designed to address this challenge in order to make sure that these farms are using the best practices possible with respect to their production system. In order to accomplish this a multi-department effort is essential toward the practical integration and application of 21st century technologies on these types of farms. Examples of technological advances include:

Bluetooth-enabled temperature, moisture and light sensors to transmit data remotely to a \$35 computer

inside the coop. The data then can be transmitted to a “cloud”-based system that also captures data submitted by farmers using a “Google form.” The use of hyperspectral imaging to better understand pasture management via the generation of Normalized Difference Vegetation Indices (NDVI). The source code, methodology and estimated costs for these and other innovations will all be “open-source” and hosted on the UCCE poultry website.

The ability to work with non-conventional commercial poultry producers that “slip through” traditional regulatory and outreach efforts is an essential component of the farms efforts. In November a one day outreach effort in Marin County for Pastured Poultry Farmers was organized. Topics including biosecurity, Avian Influenza, Salmonella control and relevant regulations were discussed. Further outreach efforts are continuing in other counties including Modoc county.

If people would like to learn more about the farm and it’s goals feel free to contact Maurice Pitesky at mepitesky@ucdavis.edu or go to the following website:

[http://ucanr.edu/sites/poultry/UC Davis Pasture Poultry and Innovation Farm/](http://ucanr.edu/sites/poultry/UC_Davis_Pasture_Poultry_and_Innovation_Farm/)



Picture of the “eggmobile” on pasture at UC Davis.

PLEASE CONTACT MAURICE PITESKY AT MEPITESKY@UCDAVIS.EDU OR 530-752-3215 WITH QUESTIONS OR COMMENTS

Highly Pathogenic Avian Influenza Preparedness: Survey Results

Maurice Pitesky, Felicia DeLaTorre, Maureen Lee-Dutra and Rodrigo Gallardo

In order to better understand gaps in avian influenza preparedness, the results of a California based HPAI preparedness questionnaire was presented at the CPF-PEPA Fall Biosecurity and Planning Seminar in Modesto on August 27th. The survey had 52 questions and covered several relevant areas including farm biosecurity practices, worker and equipment practices, litter handling and dead bird disposal, wild bird surveys and responses to a hypothetical HPAI scenario. The survey was completed by 50 individuals representing 450 layer, broiler, turkey, duck and "other" farms primarily in California. While the majority of the respondents representing the majority of the farms had responses that were consistent with adequate or excellent biosecurity practices, challenges and gaps identified include the following results:

- 25% of the respondents allow their birds "some" outdoor access
- 20% of the respondents do not have foot baths at the entrance to each house and for the people that have foot baths only 38% clean out/change out the footbaths daily.
- Only 24% of the respondents have scare/devices and/or noise makers to deter wildbirds while 61% have seen wild birds (55% of which are waterfowl) on their farm or adjacent to their farms.
- 29% of respondents do not currently have a HPAI plan
- 65% of the respondents do not believe they have the necessary personnel on site to address a HPAI outbreak.

Among other topics addressed by Federal, state, academic and farmers in attendance was the need for "open communication" to address continued preparation. If people need help developing an AI response plan or any other issue related to AI they can reach out to CDFA, APHIS, UC Davis School of Veterinary Medicine or UC Cooperative Extension.

UC Davis and CAHFS ready to study highly pathogenic avian influenza persistence

Rodrigo Gallardo

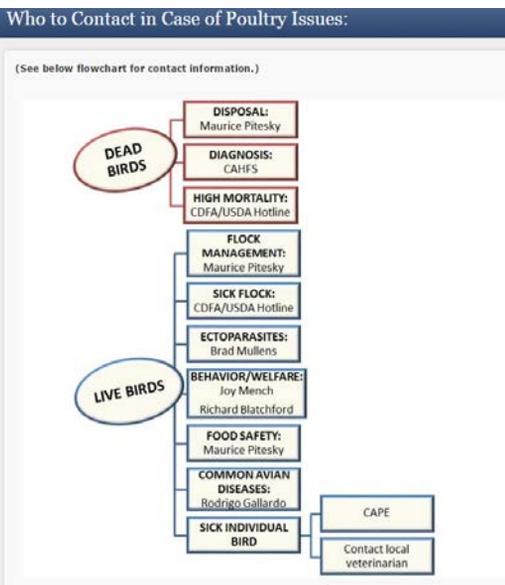
The Egg Industry Center (EIC) based in Iowa recently awarded \$65,000 to the School of Veterinary Medicine at UC Davis in order to "understand new highly pathogenic avian influenza (HPAI) viruses affecting the U.S. poultry industry and their persistence". The studies will be conducted by Dr. Rodrigo Gallardo and Dr. Beate Crossley at the School of Veterinary Medicine and the California Animal Health and Food Safety Laboratory (CAHFS) respectively. Current biosecurity measures, related with feces/bedding material and footbath management will be assessed in real turkey, broiler and layer farms by questionnaires and interviews of attending poultry veterinarians and farm owners. After measuring the viral persistence in these reproduced farm conditions with temperature and humidity control, we will create guidelines for proper feces/bedding material maintenance and footbath preparation and care. UC Davis and CAHFS collaborations continue to address the California poultry industry needs.

Carcass Composting Study Completed

Pramod Pandey

A team led by Drs Pramod Pandey & Maurice Pitesky completed a series of experiments to enhance the understanding of poultry carcass attached *Salmonella enterica* serovar Typhimurium inactivation. The experiments were conducted at multiple temperatures corresponding to composting and wet rendering processes, and the manuscript is under consideration for publication in Poultry Science Journal. Team observed that both ground and whole carcasses exposed to composting temperature had no detectable *Salmonella* after 110 hours of composting in batch experiments. The composting process was executed at temperature between 55 °C and 62 °C. The initial concentration of *Salmonella* of ground and whole poultry carcasses was in seven orders of magnitude. The results also showed that mixing not only reduced the overall time required to eliminate *Salmonella* in poultry carcasses but also improved the predictability of *Salmonella* inactivation. To scale-up the findings of this research from lab-scale to real environment, authors are in the process of garnering additional resources. Authors anticipate that the outcomes of this study will help in resolving the existing uncertainty with regards to effectiveness of composting process in pathogen inactivation. *** Paper was recently accepted for publication by the journal Poultry Science. Please contact Dr. Pramod Pandey for questions and copies of the article at pkpandey@ucdavis.edu

Remember Who to Call if you have Poultry Questions



The web address for the this flow chart along with individual contact information is at:
<http://ucanr.edu/sites/poultry/>

Getting Ready to Hatch ...

The UC Davis Winter Conference for veterinarians will be 2/20 and 2/21. The Backyard Poultry Track will include lectures on coop construction, pathology, sedation/anesthesia, radiology and more. More information can be found at:
http://www.vetmed.ucdavis.edu/ce/small_animal/winter_conference.cfm



Nutrient-Rich By-Products for Layers

Gabriela Pedroza and Annie King

Want deep yellow egg yolks? Give your layers dried excess broccoli leaves and stems. Results of published research with broccoli stems and leaves meal (BSLM) indicated that adding up to 9% in diets of 42-week-old layers increased yolk pigmentation and had no negative effects on production measurements compared to that of a corn/soy diet. We fed 15% BSLM in the diet of 35-week-old layers. It produced significantly darker yolks but had no negative effects on weight gain, feed consumption, egg weight, egg shell thickness and Haugh units (overall egg shell quality) compared to that of the control. While carotenoids in BSLM deepened yolk color, its glucosinolates can cause severe growth depression; therefore, greater than 12% - 15% BSLM is not recommended.

The research is part of a broader study to use nutrient-rich dried horticultural by-products (remaining after harvest and processing of fruits, grains, nuts, seeds and vegetables) in diets of layers. Use of BSLM and other by-products is important because California produces an estimated 96% of the broccoli and over 50% of other fruits and vegetables for the US along with vast quantities of unused material, often deposited in landfills and possibly negatively affecting the environment.



When fed discarded broccoli stems and leaves, hens deposit carotenoids in their yolks, causing a rich yellow-orange yolk color

Female birds dictate the sex of the offspring (as opposed to mammals). What are 2 exceptions?



Last quarters trivia: The biggest egg ever (over 300x the size of a hens egg)aid was by the now extinct Elephant Bird

Useful Information on Highly Pathogenic Avian Influenza can be found at:
http://www.cdffa.ca.gov/ahfss/Animal_Health/Avian_Influenza.html