



## **For Immediate Release**

### **International Production & Processing Expo**

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## **Wastewater Treatment Challenges in the Poultry and Egg Industry**

TUCKER, Ga. – Feb. 2, 2018 – While speaking at the Wastewater Treatment Challenges program at the 2018 International Production & Processing Expo, Dr. Clifford Lange, associate professor of civil engineering at Auburn University, began his presentation on the “Effects of Quaternary Ammonia on Wastewater Operations” by describing the properties of quaternary ammonium compounds (QACs) and their major uses, including biocides, fabric softeners, hair conditioners, antistatic agents, corrosion inhibitors, leather softening, pigment dispersants, sewage flocculants and preservatives to increase the shelf life of many products. Lange observed that QACs are almost ubiquitous in poultry protein and fat wastewater and solids streams. However, not all QACs are equally inhibitory. Those used for sanitation are generally the more inhibitory species, thus there is little room for choosing less inhibitory QACs.

Lange remarked that QAC blockers may protect wastewater treatment processes at the poultry plant but will increase the QAC loading of the solids sent to rendering; and processing the solids can re-solubilize the QACs, making them more inhibitory. The age of the microorganisms in the wastewater treatment plant will also affect how QACs accumulate in the biomass. Thus, higher microbial ages can increase biomass load and inhibition. Further, wastewater biomass is generally more effected by sudden increases in QACs, and gradual addition of high QAC waste streams can reduce inhibition. Optimizing pH, alkalinity, trace nutrients and redox state can also reduce the severity of QAC inhibition.

Dr. Spyros Pavlostathis, professor of environmental engineering at the School of Civil and Environmental Engineering at the Georgia Institute of Technology, reviewed a research project being funded by USPOULTRY’s research program on the fate and effect of peracetic acid (PAA) solutions in poultry processing treatment systems. Pavlostathis noted that PAA decay is significantly affected by pH, salts and transition metals; and PAA transformation is irreversible. PAA carryover to the biological treatment process is also possible. However, the effect of PAA on biological treatment processes and its actual cause are still largely unknown.

During his food safety chemical update, Juanfra DeVillena, director of quality assurance and food safety for Wayne Farms LLC, commented that peracetic acid is a highly effective antimicrobial primarily used in the food industry and healthcare systems. He provided a history on interventions and USDA micro requirements as well as discussed poultry processing plant antimicrobial interventions in detail.

Steven Woodruff, president of Woodruff & Howe Environmental Engineering, Inc., provided information on case studies and lessons learned related to food safety chemicals and wastewater treatment systems.

Woodruff observed that food safety and sanitation chemicals are critically important to the food industry, and pollution control systems need to be designed, operated and maintained in a manner which prevents potential loss of these important tools.

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**Photo caption:**

Dr. Clifford Lange, associate professor of civil engineering at Auburn University, speaking at the Wastewater Treatment Challenges program.

**ABOUT IPPE**

The International Production & Processing Expo (IPPE) is a collaboration of three shows - International Feed Expo, International Meat Expo and the International Poultry Expo - representing the entire chain of protein production and processing. The event is sponsored by the American Feed Industry Association (AFIA), North American Meat Institute (NAMI) and U.S. Poultry & Egg Association (USPOULTRY).

**ABOUT AFIA**

Founded in 1909, the American Feed Industry Association (AFIA), based in Arlington, Va., is the world's largest organization devoted exclusively to representing the business, legislative and regulatory interests of the U.S. animal food industry and its suppliers. The organization's membership is comprised of more than 670 domestic and international companies that represent the total feed industry—manufacturers of commercial and integrated feed and pet food, ingredient suppliers, pharmaceutical companies, industry support and equipment manufacturers. AFIA members manufacture more than 75 percent of the feed and 70 percent of the non-grain ingredients used in the country. AFIA is also recognized as the leader on international industry developments and holds membership in the International Feed Industry Federation (IFIF).

**ABOUT NAMI**

The North American Meat Institute (NAMI) is the leading voice for the meat and poultry industry. Formed from the 2015 merger of the American Meat Institute (AMI) and North American Meat Association (NAMA), the Institute has a rich, century-long history and provides essential member services including legislative, regulatory, scientific, international and public affairs representation. NAMI's mission is to shape a public policy environment in which the meat and poultry industry can

produce wholesome products safely, efficiently and profitably. Together, the Institute's members produce the vast majority of U.S. beef, pork, lamb and poultry and the equipment, ingredients and services needed for the highest quality products.

#### **ABOUT USPOULTRY**

U.S. Poultry & Egg Association (USPOULTRY) is the all-feather organization representing the complete spectrum of today's poultry industry, whose mission is to progressively serve member companies through research, education, communication and technical assistance. Founded in 1947, USPOULTRY is based in Tucker, Ga.