



United States
Department of
Agriculture

National Institute
of Food
and Agriculture

INVESTING IN SCIENCE | SECURING OUR FUTURE | WWW.NIFA.USDA.GOV

Protecting and educating consumers through new, innovative technologies

Max Teplitski

National Program Leader in Food Safety

USDA NIFA

Modern Extension

@ the Research x Extension Nexus

- Advances culture of innovation
- Identifies and serves emerging audiences
- Shifts from learners-consumers to learners-creators



NIFA Integrated Projects

@ the Research x Extension Nexus

- Food processing technologies
- Effective mitigation of antimicrobial resistance
- Pollinator health
- Breeding and phenomics
- Water for food production systems
- Methyl bromide transition
- STEC in beef
- *Campylobacter* and *Salmonella* in poultry



Campylobacter in Poultry



Education interventions

- Unaware of *Campylobacter*
 - 92.5% of consumers
 - 28% of poultry industry workers
- Used theory of planned behavior to impact behavioral change
 - Social media vs traditional extension

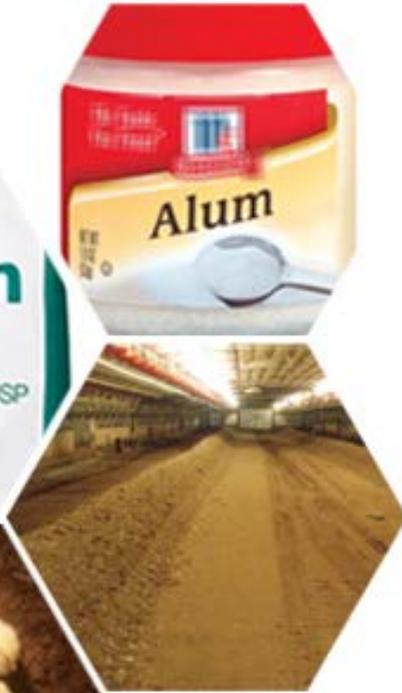
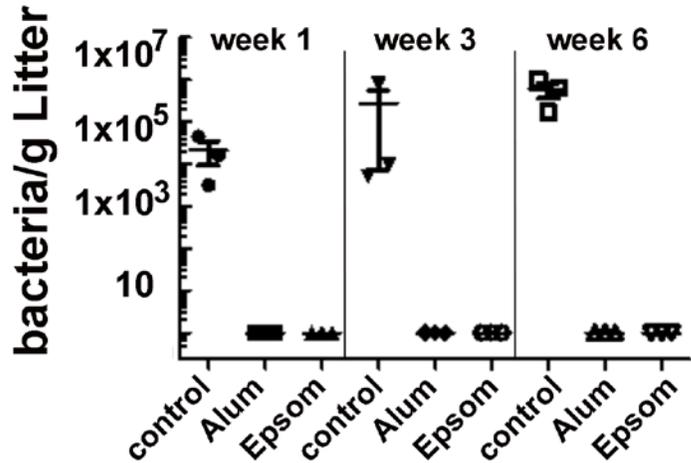
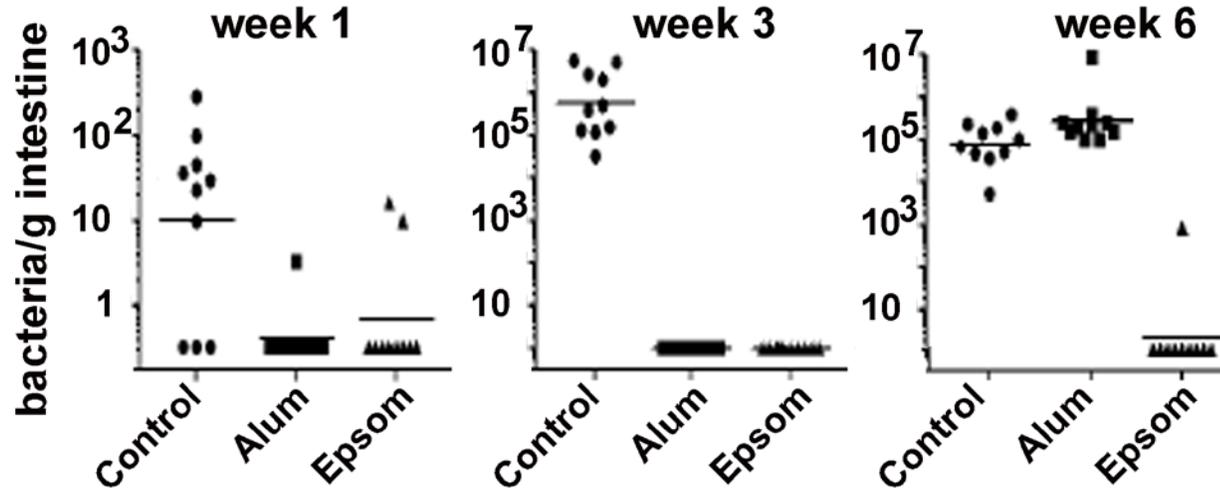


On farm practices and risk factors for *Campylobacter*

- Feed conversion, paw burn and *Campylobacter* prevalence correlate



Litter amendments eliminate *Campylobacter*

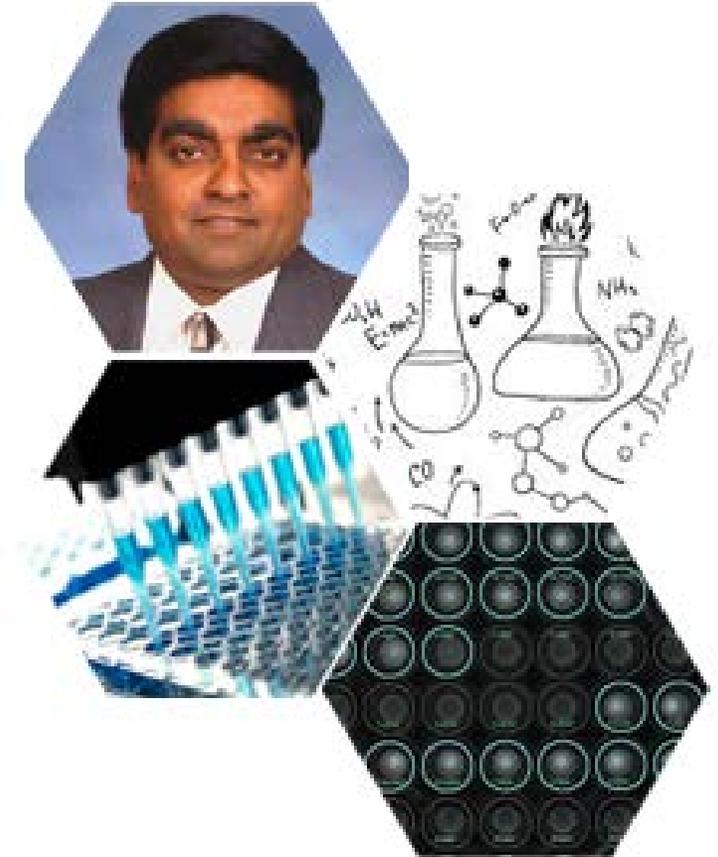
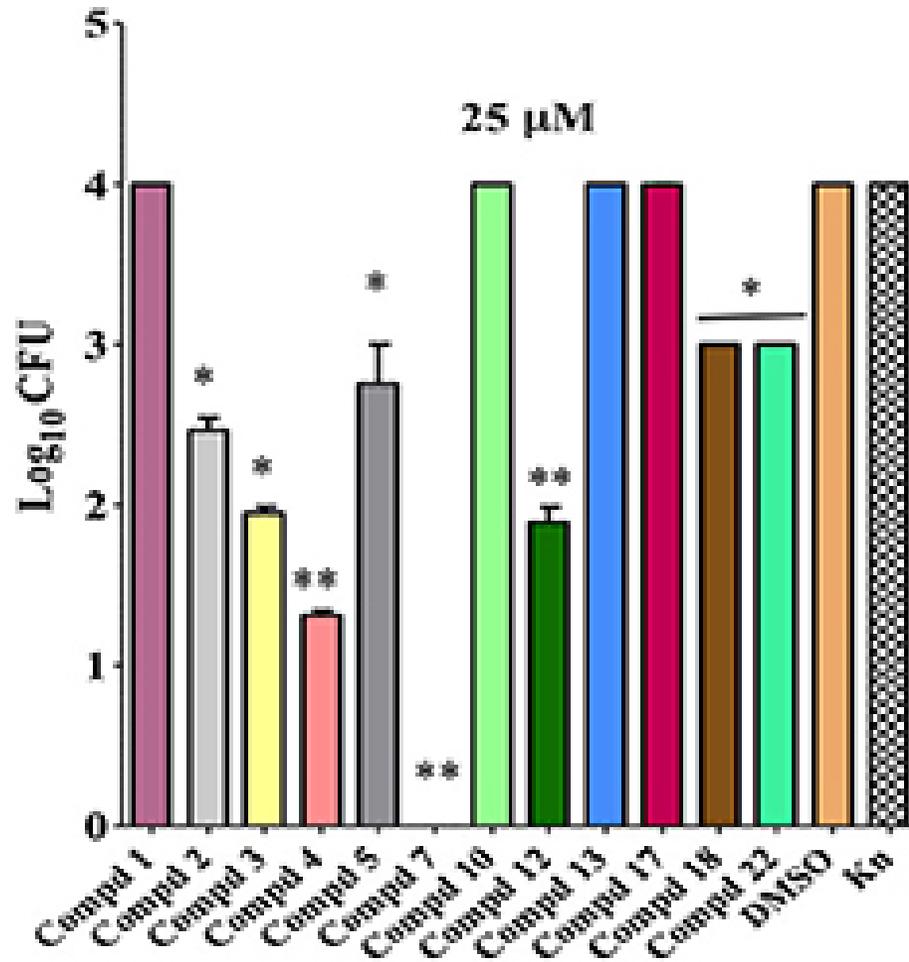


Efficacious recombinant vaccine



- Vaccine reduced *Campylobacter* load by 100-10,000 CFU/g feces

Novel anti-*Campylobacter* compounds identified



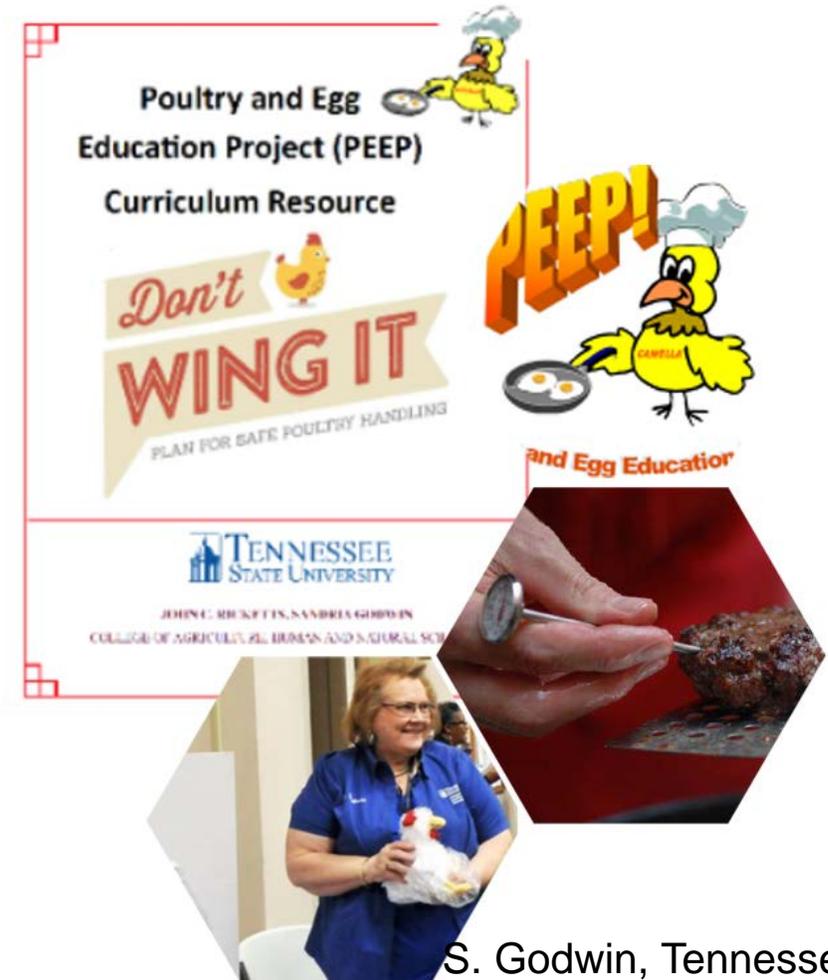
Effective post-harvest interventions reduce *Campylobacter* load

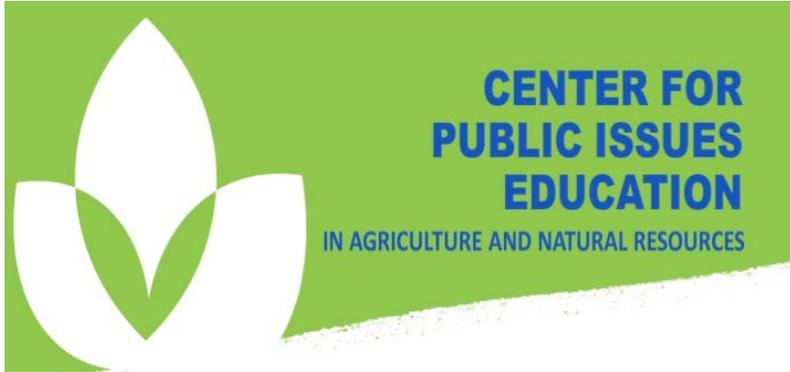
- Timing of feed withdrawal is critical
- Multi-stage or hard carcass scald
 - up to 4 log reduction
- Air vs water chilling
- Blast chilling or crust freezing
 - up to 1.5 log reduction



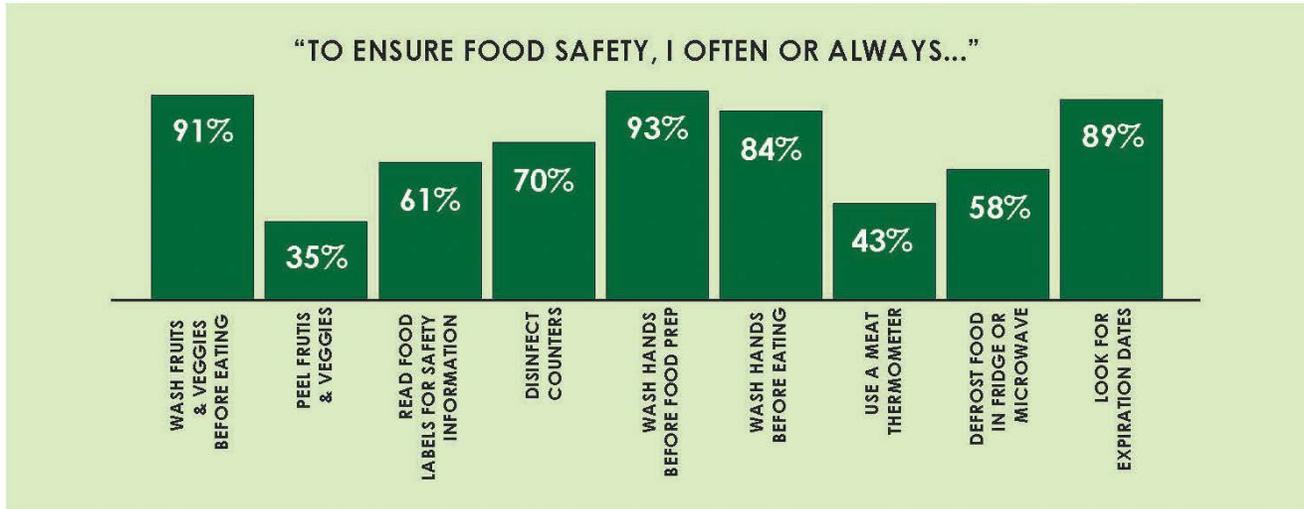
Science-Based Messages to Improve Storage, Handling, and Preparation of Poultry

- Cookbook instructions increase food safety behaviors 82-94%
- 64% of youth share food safety information with parents
- Type of kitchen lighting impacts visual perception of meat doneness





“I AM RESPONSIBLE FOR MY OWN FOOD SAFETY”



FLORIDIANS HUNGER FOR FOOD SAFETY

“FOOD SAFETY IS A MAJOR CONCERN OF MINE”



ARE WORRIED ABOUT FOOD PREPARED IN THEIR KITCHEN



ARE WORRIED ABOUT FOOD WHEN EATING OUT



United States
Department of
Agriculture

National Institute
of Food
and Agriculture

INVESTING IN SCIENCE | SECURING OUR FUTURE | WWW.NIFA.USDA.GOV

NIFA invests along the chain of innovation

