Minutes
S-1033 Annual Meeting
November 8, 2007

Discussion about meeting on campus. Meeting site next year – Louisiana State University.(Marlene Janes – Host)

- Ram Rao – Farm Bill is the major issue.
  - Senate version would mean CSREES would be new entity within NIFA and with IFAFS.
  - Specialty Crops Initiative includes food safety component. Please provide input.
  - Likely to merge 406 authority into NRICGP but, if retained as is, will retain integrated programs.
  - Encourage application for the Secretary's Award – not there in name but provides for recognition.

- Attendees

Barefoot/Susan,	sbrft@clemson.edu;	Clemson University
Boyer/Renee	rrboyer@vt.edu	Virginia Tech
Chen/Haiqiang	haiqiang@udel.edu;	University of Delaware
Dickson/James	jdickson@iastate.edu;	Iowa State University
Goodridge/Lawrence	Lawrence.Goodridge@colostate.edu;	Colorado State University
Harris/Linda	ljharris@ucdavis.edu;	University of California-Davis
Hung Yen-Con	yhung@uga.edu;	University of Georgia
Janes/Marlene	mjanes@agctr.lsu.edu;	Louisiana State University
Lejeune/Jeff	lejeune.3@osu.edu;	Ohio State University
Rajashekara/Gireesh	rajashekara.2@osu.edu	Ohio State University
Rao/Ram	rrao@csrees.usda.gov;	USDA CSREES
Ryser/Elliot	ryser@msu.edu;	Michigan State University
Sofos/John	john.sofos@colostate.edu;	Colorado State University
Wang/Hua	wang.707@osu.edu;	Ohio State University

Presentations:

Meat and Poultry (pre-and post-harvest)

- Elliot Ryser – MSU
  Deli slicer study completed; updated *L. monocytogenes* deli risk assessment framework. Supposed to clean slicers every 4 hours but compliance is poor (wiped slicer every 4 hours).
  Questions: How to get buy-in from deli. Worked with private deli; donated slicers; free testing. Deli remains anonymous. Funded via federal funds so information is FOI. Could you be subpoenaed? Positive on product for pathogen; what is the obligation? University provides support.

- Jim Dickson with Byron Brehm-Stecher – ISU
  - Antibiotic-free and antibiotic-treated hog herds. Higher prevalence of antibiotic resistant isolates in antimicrobial-free animals.
  - Looking at populations in cattle; quantitative and qualitative populations of Salmonella
  - Looking at controlling Johnes organism (Mycobacterium paratuberculosis) in cattle
  - A colicin E with antimicrobial activity against L. monocytogenes (published in JFP)
  - Risk assessment project
  - Aerosol transmission project of Listeria
  - Near real-time detection of pathogens via flow cytometry
  - Russian vs US official methods comparison on-going

Discussion about standardizing methodology/sharing methods:

Commonality of methods is important. Or at least, compare methods and ensure that they are equivalent. A plethora of methods in food microbiology – culture confirmation, media (even differences in manufacturer's); FDA BAM Manual sometimes not validated for product.

- Gireesh Rajashekara
  Campylobacter colonization in poultry
  - In vivo detection of bioluminescent bacteria. Looking at bioluminescent detection in mice as animal model. Gireesh has GR023 engineered isolate (lux+, kanr) of Brucella melitensis established in salivary gland in IFF-1-/- mice; can monitor disease progression.
  - IVIS imaging system. Intensity of color correlated with viable population. Can injured bacteria cause color reduction and under-estimation of population
  - C. jejuni genes contributing to chicken colonization, host and environmental factors influencing, vaccines/other prevention measures.
    - Twin-arginine translocation pathway (TAT) as possible target for vaccine therapy.
- Susan Barefoot
  Showed NIMSS website and discussed annual report for states for S-1033

- Larry Goodridge
  - Looking at pre-harvest persistence and diversity of E.coli O157:H7 in feedlot cattle (Sofos).
  - Reduction of E.coli during cooking of marinated, tenderized, restructured beef (Sofos).
  - Antimicrobial effects of ξ-poly-lysine (GRAS in Japan, applied for in USA) on E.coli, S. typhimurium and Lm; most bactericidal in low protein, high starch solutions (Sofos).
  - Quorum sensing signal producton by Salmonella and E.coli O157:H7 (Sofos)
  - Modeling growth of LM on ham and turkey breast (Sofos)
  - LM has two species-like evolutionary lineages and subtypes (Nightingale).

- Hua Wang

- Large spectrum of ab^r genes in food chain.
- Broad spectrum of AR carriers
- Functionality of determinants
- AR from food responsible for AR from human?
    - Newborns contain isolates with AR [variety of tet (M, K, O, S) determinants]
    - Other routes for AR transmission.
- AR transmission through the food chain
    - Revealing the science involved in AR transmission (major route is transfer via commensals)
    - Work with industry for effective control
        - ID CCP's for AR
        - Processing control
        - Safety screening for probiotics

- Jeff LeJeune (OSU)
    - Starling infection with E.coli O157:H7 and excretion (
    - Looked at incidence of L.m., E.c., Sal, Ye in farm-raised deer
    - Campylobacter phage typing; phage have broad host range; some are very specific.
    - Vegetable aspects. Looked at transmission of E. coli across the plant. Survival on damaged vs damaged leaves. Remains localized to site of infection. What if internalized.
    - Effect of season on coliform counts in spinach; pre-and post-washing coliform counts in spinach and baby spinach (~250 samples each point)
    - Cows bedded on sand had less E.coli than cows bedded on sawdust. Note: Washed bedding materials were unsupportive of E. coli survival.

- Linda Harris (UC-Davis)
    - Isolation of Salmonella from stockpiled almonds. 38% of stockpiled raw almonds were positive for Salmonella. Took 5 years to build relationships to point of receiving permission to sample stockpiles. (Uesugi, Danyluk, Harris. 2007. JFood Prot. 70:820).
    - How does almond sample preparation affect isolation and levels
    - In-shell Propylene Oxide (PPO) treatment
    - Scientific Review Board questioned results -
        - Inoculation method – How are almonds contaminated. Many issues raised by Board; re-did analyses and got very similar results.
        - Risk assessment (Danyluk, Harris and Schnaffer. 2006. J. Food Prot. 69:)
    - Safe-Handling of Fruits & Vegetables Outreach - On things dairy farmers can do to protect neighbors

- Hung, Yen-Con (UGa)
    - Efficacy of GRAS and naturally occurring antimicrobials. Looked at electrolyzed water (EO).
    - Electrolyzed acidified, chlorinated water is viricidal; electrolyzed alkaline water is oxidizing and surface active.

- Log reduction is 2 logs. Works on surface of fruits, vegetables, some meat products. Concern: oxidation of lipids; bleaching of fruits and vegetables.
- How generated determines product. Acidified EO can be pH 2, 5, or 7. Economics is key factor.
- Working through methods of a national fast food chain. Used existing methods with objective of adding EO water step to process. Employees do not necessarily follow the company's handbook – time, conditions, training, production pressure.
- Crisp-Chill steps to cool lettuce to achieve crispness; in 4C water for 15 min. Organic materials reduce EO activity.
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- Haiqing Chang (Joerger, Hoover and Kniel) - UDel
  - Effectiveness of chitosan-coated films incorporating sodium lactate (SL) against L.m. ; only SL films were inhibitory. HPP of oysters to inactivate V.p. and V.v. (Chang)
  - Virus survival in sludge.

- Renee Boyer (Williams, Sumner, Ponder):VT. Variety of scientific studies being addressed.
  - The effect of α-cyclodextran and cinnamic acid effect on E. coli O157:H7 (compare with Fung's study); stability; effect on normal intestinal flora.

- Elliott Ryser () MSU
  - Systems Approach to Minimize microbial food safety hazards with fresh and fresh cut leafy greens. NIFSI = UGa, Clemson, MSU.
  - Objective is to develop transfer coefficients for E.coli O157:H7 in processing steps (shredding, washing, conveying, cutting, etc).
  - Processing line equipment donated
  - Use GFP label avirulent strain. Outbreak strain with att and stx deleted.
  - Consideration: surface and internal contamination
  - Equipment surfaces established w GloGerm
  - MSU will look at x-ray irradiation of leafy greens with B. Niemira (USDA)
    - D_{10} = 103 to 103 Gy (not kGy) for E.coli O157:H7
    - Manufacturer of low energy x-ray irradiator = Rayfresh Foods, Inc

- Marlene Janes – LSU
  - Lysozyme from oyster: purify and apply in seafood to assess antimicrobial effectiveness on smoked salmon.
  - Strain to strain difference in V.p. and V.v.
  - Differences in growth, survival and cold adaptation for V.v. and V.p. are significant

Discussion/Election-

- Jeff LeJeune (OARDC- Wooster, Ohio) elected as secy
- Increase membership or increase attendance.
- Write conference grants/symposium. Deadline January. At next meeting will work on proposal together – Jeff to take lead and send e-mails in January.
- Topical food safety programs with attendant workshop.
  - Targeted to Produce and animal agriculture

    - Targeted to cross-contamination
- Next meetings
    - LSU, Baton Rouge – 2008.
    - UC-Davis/Asilomar – 2009.
- Send input concerning NRI and NIFSI to Erin Daly at USDA-CSREES.
- Send NIMSS website to team members
- Send Lane Kotara's e-mail to follow–up for receipts.
- Remind about progress reports.