Project Number: **S294**

Project Title: **QUALITY AND SAFETY OF FRESH-CUT VEGETABLES AND FRUITS**

Period Covered: **10/01/2021 to 9/30/2022**

Date of report: **03/01/2023**

Annual Meeting Date: **10/27/2022**

In person attendees:

Almenar, Eva (ealmenar@msu.edu) – MI

Brecht, Jeffrey (jkbrecht@ufl.edu) – FL

Lui, Tie (tieliu@ufl.edu) - FL

Bai, Jinhe (Jinhe.bai@usda.gov) (USDA FL)

Olmedo, Gabriela (Gabriela.Olmedo@usda.gov) (USDA FL)

Plotto, Anne (anne.plotto@usda.gov) (USDA FL)

Wall, Gretchen (gwall@freshproduce.com), international Fresh Produce Association (IFPA)

McEntire, Jennifer, (jmcentire@freshproduce.com), international Fresh Produce Association (IFPA)

Online attendees:

Senseman, Scott (scott.senseman@okstate.edu), Project administrator, OK

Nannapaneni, Rama (nannapaneni@fsnhp.mstate.edu) - MS

Brehm-Stecher, Byron (byron@iastate.edu) - IA

Sargent, Steve (sasa@ufl.edu) - FL

Jorge Fonseca (Jorge.fonseca@usda.gov) (USDA MD)

Non-attending participants also submitted a report:

Fan, Xuetong (Xuetong.Fan@ars.usda.gov) – USDA PA

**Meeting minutes**:

1. **Introduction**:

Introductions

Previous meeting minutes had not been distributed. Need to do so.

Jeff Brecht (JKB) explains that we are in a new 5-year project as of October 1, 2022. The new project followed the previous, with the same four objectives. What is new: expanded from fresh-cut to whole products that can be processed to create fresh-cut vegetables and fruits.

1. **Welcome from Administrative Advisor**:

Scott Senseman (SS), Project Administrator, invites everyone to go to the NIMS project web site. Need to get the meeting information early in order to get early authorization.

JKB informed that in January 2022, IFPA merged with PMA. IFPA used to meet in the Spring, PMA in the Fall. Funding for travelling has been an issue in the past. Need to make sure not to spend everything before the next meeting since the next IFPA meeting will be in the fall as well, and funds will be distributed earlier in the year. It was noted that all members need to create in the new NIFA research project system a version of the S294 project that is specific for their institution – Hatch funds can only go to your institution and to you, the researchers, if there is such a project. Your project can use whatever parts of the S294 MultiState Project Statement (at [www.nimss.org](http://www.nimss.org)) are appropriate for the research you plan to do over the next 5 years.

SS says that every institution handles the distribution of Hatch funds differently, some might use it as salaries. Participants should let their administration know if they have problems getting the money they need to attend the S294 Annual Meeting and to conduct research.

Eva Almenar (EA) suggests that the information about funding should be posted on the NIMSS web site, to attract new members. She says our experimental stations receive multi-state funds and in the past, these funds have been used to cover salaries partially and travel expenses to attend the annual meeting, and/or to support research projects (e.g., purchase of a texturometer). Each experimental station handles the funds differently. New members are encouraged to contact their experimental stations to learn more about this available funding.

1. **Elections**

Currently, JKB is the Chair, Floyd Woods was the vice chair, Angela Shaw was the secretary. They are 2-year commitments. Floyd took an early medical retirement at Auburn, so he is no longer participating in S294. Angela moved from U. Illinois to Texas Tech and is no longer working with fresh-cuts, so she is also no longer participating in S294.

Anne Plotto (AP) nominated Jorge Fonseca as Chair. He accepted.

JKB nominated Tie Liu as Vice Chair. He accepted.

EA nominated AP as secretary. She accepted to be the secretary for one year.

JKB about recruiting participants: the S294 mailing list has 34 names, only 12 are registered on the NIMSS web site.

1. **Improving S-294 engagement with IFPA**

Gretchen Wall:

She is the first official hired by IFPA and is the Director Food Safety and Quality. She previously worked 11 years at Cornell University in extension service. She is now the new director of Food Safety and Quality. The UFPA’s Food Safety & Technology Council (FSTC) continues with IFPA, with about 40 industry reps.

Produce Quality Sub-Committee: There are 20 members right now, the group description and goals and priorities are still under discussion. Jeff Brecht, Angelos Deltsidis (UGA), and Trevor Suslow (retired UC, Davis, former S294 member) are members of that sub-committee.

IFPA provides micro-volunteer opportunities, to get in touch with members. Gretchen Wall is the contact person if anyone from S-294 is interested. The IFPA Fresh Produce Research Center will connect academia with industry. For more information, please see the IFPA web site. <https://www.freshproduce.com/who-we-are/fresh-produce-research-center/>

JKB noted that there is another Food Safety MultiState Project, which explains why some of our food safety area members left S-294 to join that other group. Other former S294 members have been lost to retirements (Marita Cantwell, Trevor Suslow, Michael Saltveit, Diane Barrett), and Linda Harris from UC Davis moved from research to administration). JKB mentions that we should have a S-294 representative on the Food Safety & Technology Council of IFPA, which has 40 members.

1. **Station reports:**

**ARS-Florida** (Bai & Plotto)

Winter melon fruit and jicama roots are being explored as low-sugar/low calory juice

LED lights for microgreens and tomatoes, in greenhouse

Citrus, strawberry quality from breeding programs

Fresh-cut mangoes (joint project with UF – see below under the Florida report).

**ARS-Beltsville** (Fonseca)

This Unit has 7 scientists. Tian Bao Yang has a patent pending on two compounds to accelerate ripening of non-climacteric fruit on the plant (cherry, strawberry…). He is also working to improve nutrition content in microgreens.

Yaguang (Sunny) Luo has a patent on a vertical system to wash and sanitize leafy greens, the “tumble zone”. She is still working on the design of the nozzle. She has a collaboration with ARS in California to select cultivars for fresh-cut lettuce.

Bin Zhao has a collaboration with Texas A&M for non-particle coating. The question is whether it can work on the surface of fresh cut tissue.

The Beltsville Unit investigates e-commerce for consumer preferences. Relationship between online and real-time products using eye-tracking.

Mycotoxins in fruit: blue mold in blueberry and apples.

**University of Florida:**

Tie Liu, Jeff Brecht and Eleni Pliakoni (KSU): Project to identify marker genes that identify stages of senescence in broccoli, with the goal to design a fast assay. These kinds of genes are called SAGs (Senescence-Associated Genes)

Sargent and colleagues compared forced air/hydrocooling/slushed ice for cooling broccoli. Found that they are all equivalent as long as RH is maintained. Also worked with lettuce breeder and a PhD student (Catherine Belisle) to reduce pink rib.

Brecht and Plotto (ARS-Ft. Pierce) headed a project to extend the shelf life of riper (than currently used commercially) fresh cut mango. A handbook, *Fresh-cut Mango Best Management Practices*, is being prepared for release in 2023.

**Michigan State University**, School of Packaging (Almenar)

Investigated orange peel waste to be used as a “filler” in rigid and film packaging

Blown film extrusion development

**Mississippi State Univ.** (Rama Nannapaneni)

Rama had a power point presentation.

**Iowa State U.** (Byron Brehm-Stecher)

Nothing to report for this past year. Byron mentioned a few names of researchers in the food safety and microbiology area that could join S-294 – see list at bottom of minutes.

1. **Research Proposals, Conference Proposals to USDA, Wrap-Up Session:**

EA is reiterating the need to interact with industry members. Suggests to have the S-294 meetings in the am, and meet & greet with industry in the pm. There was a brief “meet & greet” with the IFPA Quality Group on October 28th at 1:00 pm.

The goal of this group (S294) is to work on projects together, as there are funding opportunities.

Idea to create a Center for Produce Safety, virtual.

Also, importance to have an advisory board who can react to researchers’ ideas.

IFPA receives a lot of requests for information from industry. They are “match makers” between academia and industry. Jennifer is the contact person.

Jorge suggests that we resend the bios of each S-294 member to IFPA.

The FSTC addresses issues that are more regulatory than research.

Need to put together a conference proposal to USDA. The money is there, need to use it.

Discussion about symposium, communication with industry. The new IFPA is trying to be more engaging.

**Food Safety/Food Micro People Suggested During 10/27/22 S-294 Meeting**

1. Byron Brehm-Stecher, Iowa State (rapid detection of pathogens, antimicrobial development, natural antimicrobials) <https://fshn.hs.iastate.edu/directory/brehm-stecher-byron-f>
2. Aubrey Mendonca, Iowa State (novel processing/microbial inactivation methods, natural antimicrobials) <https://fshn.hs.iastate.edu/directory/mendonca-aubrey-f>
3. Ramakrishna Nannapaneni, Mississippi State <https://www.fsnhp.msstate.edu/associate.php?id=75>
4. Camila Rodrigues (Auburn) <https://agriculture.auburn.edu/about/directory/faculty/camila-rodrigues/>
5. Sunny Luo <https://www.ars.usda.gov/people-locations/person/?person-id=47613>
6. Armitra Jackson (Alabama A&M) <https://www.aamu.edu/academics/colleges/agricultural-life-natural-sciences/departments/food-animal-sciences/food-microbiology.html>
7. Luxin Wang (UC Davis) <https://foodscience.ucdavis.edu/people/luxin-wang#/>
8. Dr. Chang Chen (starting at Cornell, June 2023)